



GLOBAL TOOLS  
SUPPLY

# CATALOG

GTS-Precision Tools  
PCD/PCBN Tool Product Manual



**Z** | **C** | **C** | **G** | **W** | **12** | **02**

Table 0 | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 | Table 6

**04** | **L** | **F** | **00** | **R** | **1**

Table 7 | Table 8 | Table 9 | Table 10 | Table 11 | Table 12

**PCD Insert Model**

**1-Insert Shape**

Mark	Blade Shape
C	Lozenge
D	
V	
S	Square
T	Positive triangle
R	Rotundity
W	Iso-angle hexagon

**2-Back Corner**

Mark	The Back Corner
B	
C	
P	
0	Other

The band indicates that there are also cases where 10 degrees are used

Mark	Blade Structure
Z	Composite
	Welded

**4-Hole Type**

Mark	Hole Type
N	No holes
A	Cylinder holes
B	One-sided Inclination cylinder hole
W	
T	
C	Double-sided Inclination cylinder hole
Q	
X	special

**3-Tip Height Allows Tolerances**

Mark	High Tip Allows Tolerances	The Inner Cut Circle Allows Tolerances	The Thickness Allows Tolerances
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
M	±0.08~±0.2	±0.05~±0.15	±0.13

**6-Thickness**

Mark	Thickness
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

**5-Cut Round**

Shape	Mark	Long Cutting Edge	Inscribed Circle	Shape	Mark	Long Cutting Edge	Inscribed Circle	Shape	Mark	Long Cutting Edge	Inscribed Circle
	05	5.64	5.56		05	5.56	5.56		08	8	8
	06	6.4	6.35		06	6.35	6.35		10	10	10
	08	8	7.94		08	7.94	7.94		12	12	12
	09	9.7	9.525		09	9.525	9.525		12	12.7	12.7
	12	12.9	12.7		12	12.7	12.7		15	15.875	15.875
	16	16.1	15.875		15	15.875	15.875		16	16	16
	19	19.3	19.05		19	19.05	19.05		19	19.05	19.05
	07	7.7	6.35		06	6.9	3.97		25	25	25
	09	9.7	7.94		08	8.2	4.76		25	25.4	25.4
	11	11.6	9.525		09	9.6	5.56	04	4.3	6.35	
	15	15.5	12.7		11	11	6.35	05	5.4	7.94	
	19	19.4	15.875		16	16.5	9.525	06	6.5	9.525	
	08	8.3	4.76					08	8.7	12.7	
	09	9.7	5.56				10	10.9	15.875		
	11	11.1	6.35								
	16	16.6	9.525								

**7-Tip Arc**

Mark	Knife Tip Arc
00	0
01	0.1
02	0.2
04	0.4
08	0.8
10	1
12	1.2
16	1.6
24	2.4
M O	Round (metric)

**12-Number of Heads**

Mark	Number of Heads
1	1
2	2
3	3
4	4

**9-Edge Form**

Mark	Edge Form
R	Passivation
T	Inverted
S	Inverted & Passivated
F	Sharp Edge

**10-Front Corner**

Mark	Front Corner
03	3
04	4
05	5
07	7
10	10
15	15

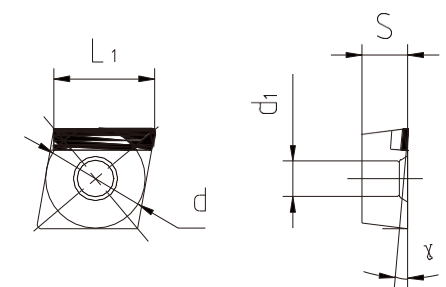
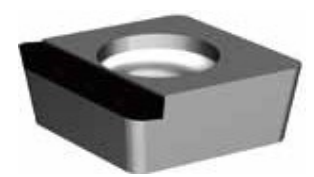
**11- Direction of Use**

Mark	Direction of Use
R	Right Hand
L	Left Hand
X	Not

**8-Edge**

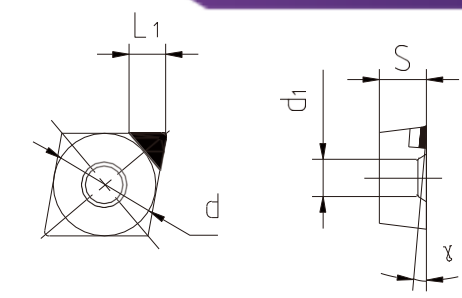
Mark	Edge
L	Long cut edges
S	Cut the edges left and right

### PCD Tip Front Corner



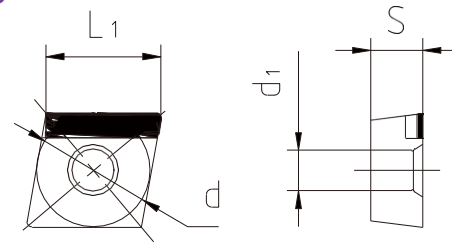
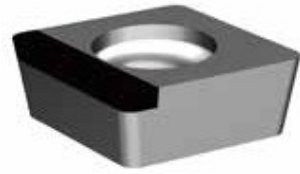
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 3 0 2
CCGW060204LF03-R1	6.35	2.38	2.8	6	●	●	●
CCGW060204LF05-R1					●	●	●
CCGW060204LF07-R1					●	●	●
CCGW060208LF03-R1	6.35	2.38	2.8	5.6	●	●	●
CCGW060208LF05-R1					●	●	●
CCGW060208LF07-R1					●	●	●
CCGW09T304LF03-R1	9.525	3.97	4.4	9.2	●	●	●
CCGW09T304LF05-R1					●	●	●
CCGW09T304LF07-R1					●	●	●
CCGW09T308LF03-R1	9.525	3.97	4.4	8.8	●	●	●
CCGW09T308LF05-R1					●	●	●
CCGW09T308LF07-R1					●	●	●
CCGW120404LF03-R1	12.7	4.76	5.5	12.5	●	●	●
CCGW120404LF05-R1					●	●	●
CCGW120404LF07-R1					●	●	●
CCGW120408LF03-R1	12.7	4.76	5.5	12	●	●	●
CCGW120408LF05-R1					●	●	●
CCGW120408LF07-R1					●	●	●
CCGW060204LF03-L1	6.35	2.38	2.8	6	●	●	●
CCGW060204LF05-L1					●	●	●
CCGW060204LF07-L1					●	●	●
CCGW060208LF03-L1	6.35	2.38	2.8	5.6	●	●	●
CCGW060208LF05-L1					●	●	●
CCGW060208LF07-L1					●	●	●
CCGW09T304LF03-L1	9.525	3.97	4.4	9.2	●	●	●
CCGW09T304LF05-L1					●	●	●
CCGW09T304LF07-L1					●	●	●
CCGW09T308LF03-L1	9.525	3.97	4.4	8.8	●	●	●
CCGW09T308LF05-L1					●	●	●
CCGW09T308LF07-L1					●	●	●
CCGW120404LF03-L1	12.7	4.76	5.5	12.5	●	●	●
CCGW120404LF05-L1					●	●	●
CCGW120404LF07-L1					●	●	●
CCGW120408LF03-L1	12.7	4.76	5.5	12	●	●	●
CCGW120408LF05-L1					●	●	●
CCGW120408LF07-L1					●	●	●

### PCD Tip Front Corner



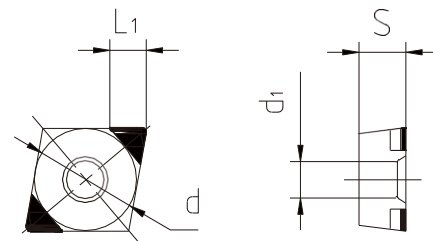
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 3 0 2
CCGW060204SF03-X1	6.35	2.38	2.8	3.1	●	●	●
CCGW060204SF04-X1					●	●	●
CCGW060204SF05-X1					●	●	●
CCGW060204SF07-X1	6.35	2.38	2.8	3	●	●	●
CCGW060204SF10-X1					●	●	●
CCGW060204SF15-X1					●	●	●
CCGW060208SF03-X1	6.35	2.38	2.8	3	●	●	●
CCGW060208SF04-X1					●	●	●
CCGW060208SF05-X1					●	●	●
CCGW060208SF07-X1	6.35	2.38	2.8	3	●	●	●
CCGW060208SF10-X1					●	●	●
CCGW060208SF15-X1					●	●	●
CCGW09T304SF03-X1	9.525	3.97	4.4	3.5	●	●	●
CCGW09T304SF04-X1					●	●	●
CCGW09T304SF05-X1					●	●	●
CCGW09T304SF07-X1	9.525	3.97	4.4	3.5	●	●	●
CCGW09T304SF10-X1					●	●	●
CCGW09T304SF15-X1					●	●	●
CCGW09T308SF03-X1	9.525	3.97	4.4	3.4	●	●	●
CCGW09T308SF04-X1					●	●	●
CCGW09T308SF05-X1					●	●	●
CCGW09T308SF07-X1	9.525	3.97	4.4	3.4	●	●	●
CCGW09T308SF10-X1					●	●	●
CCGW09T308SF15-X1					●	●	●
CCGW120404SF03-X1	12.7	4.76	5.5	4.7	●	●	●
CCGW120404SF04-X1					●	●	●
CCGW120404SF05-X1					●	●	●
CCGW120404SF07-X1	12.7	4.76	5.5	4.7	●	●	●
CCGW120404SF10-X1					●	●	●
CCGW120404SF15-X1					●	●	●
CCGW120408SF03-X1	12.7	4.76	5.5	4.6	●	●	●
CCGW120408SF04-X1					●	●	●
CCGW120408SF05-X1					●	●	●
CCGW120408SF07-X1	12.7	4.76	5.5	4.6	●	●	●
CCGW120408SF10-X1					●	●	●
CCGW120408SF15-X1					●	●	●

### PCD Tip with a Front Angle of 0 Degrees



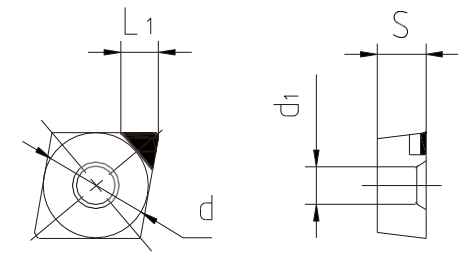
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 302
CCGW060204LF00-R1	6.35	2.38	2.8	6	●	●	●
CCGW060208LF00-R1	6.35	2.38	2.8	5.6	●	●	●
CCGW09T304LF00-R1	9.525	3.97	4.4	9.2	●	●	●
CCGW09T308LF00-R1	9.525	3.97	4.4	8.8	●	●	●
CCGW120404LF00-R1	12.7	4.76	5.5	12.5	●	●	●
CCGW120408LF00-R1	12.7	4.76	5.5	12	●	●	●
CCGW060204LF00-L1	6.35	2.38	2.8	6	●	●	●
CCGW060208LF00-L1	6.35	2.38	2.8	5.6	●	●	●
CCGW09T304LF00-L1	9.525	3.97	4.4	9.2	●	●	●
CCGW09T308LF00-L1	9.525	3.97	4.4	8.8	●	●	●
CCGW120404LF00-L1	12.7	4.76	5.5	12.5	●	●	●
CCGW120408LF00-L1	12.7	4.76	5.5	12	●	●	●

### PCD Tip Front Corner



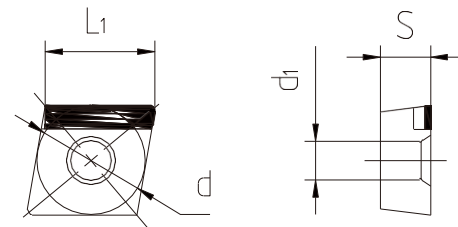
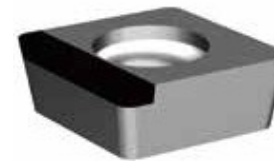
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 302
CCGW060204SF00-X1	6.35	2.38	2.8	3.1	●	●	●
CCGW060208SF00-X1	6.35	2.38	2.8	3	●	●	●
CCGW09T304SF00-X1	9.525	3.97	4.4	3.5	●	●	●
CCGW09T308SF00-X1	9.525	3.97	4.4	3.4	●	●	●
CCGW120404SF00-X1	12.7	4.76	5.5	4.7	●	●	●
CCGW120408SF00-X1	12.7	4.76	5.5	4.6	●	●	●

### PCD Tip Chip-Breaking Grooves



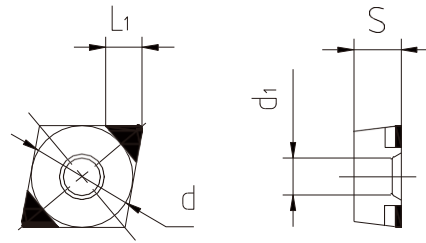
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 302
CCGT060202SF00-X1	6.35	2.38	2.8	3.4	●	●	●
CCGT060204SF00-X1	6.35	2.38	2.8	3.2	●	●	●
CCGT09T304SF00-X1	9.525	3.97	4.4	4.3	●	●	●
CCGT09T308SF00-X1	9.525	3.97	4.4	4.1	●	●	●

### PCD Tip 0°Front Corner



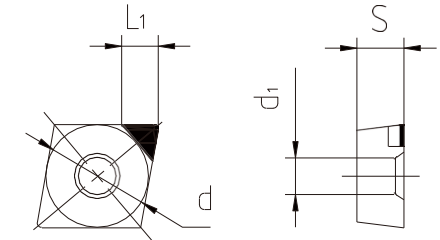
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT 10	GT 302
CPGW060204LF00-R1	6.35	2.38	2.8	6.2	●	●	●
CPGW060208LF00-R1	6.35	2.38	2.8	6.1	●	●	●
CPGW09T304LF00-R1	9.525	3.97	4.4	9.4	●	●	●
CPGW09T308LF00-R1	9.525	3.97	4.4	9.3	●	●	●
CPGW060204LF00-L1	6.35	2.38	2.8	6.2	●	●	●
CPGW060208LF00-L1	6.35	2.38	2.8	6.1	●	●	●
CPGW09T304LF00-L1	9.525	3.97	4.4	9.4	●	●	●
CPGW09T308LF00-L1	9.525	3.97	4.4	9.3	●	●	●

### PCD Tip with a Front Angle of 0 Degrees



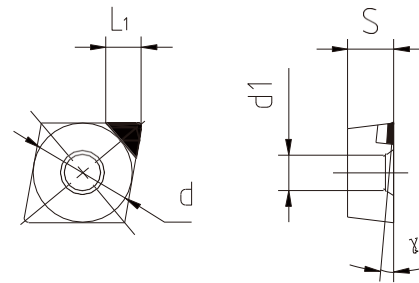
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
CPGW060204SF00-X2	6.35	2.38	2.8	3.1	●	●	●
CPGW060208SF00-X2	6.35	2.38	2.8	3	●	●	●
CPGW09T304SF00-X2	9.525	3.97	4.4	3.5	●	●	●
CPGW09T308SF00-X2	9.525	3.97	4.4	3.4	●	●	●

### PCD Tip Chip-Breaking Grooves



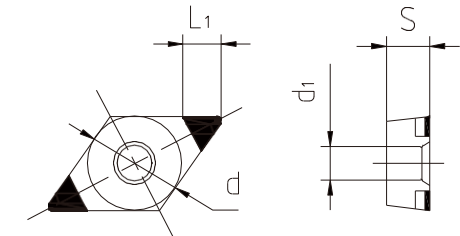
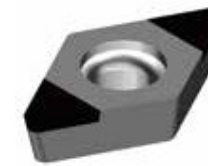
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
CPGT060204SF00-X1	6.35	2.38	2.8	3.1	●	●	●
CPGT060208SF00-X1	6.35	2.38	2.8	3	●	●	●
CPGT09T304SF00-X1	9.525	3.97	4.4	3.5	●	●	●
CPGT09T308SF00-X1	9.525	3.97	4.4	3.4	●	●	●

### PCD Tip Front Corner



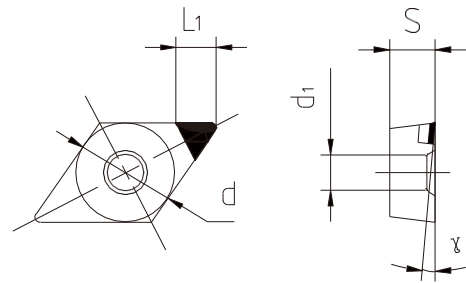
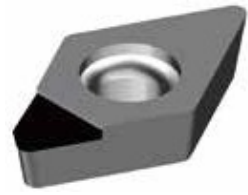
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
CPGW060204SF03-X1	6.35	2.38	2.8	3.1	●	●	●
CPGW060204SF05-X1					●	●	●
CPGW060208SF03-X1	6.35	2.38	2.8	3	●	●	●
CPGW060208SF05-X1					●	●	●
CPGW09T304SF03-X1	9.525	3.97	4.4	3.5	●	●	●
CPGW09T304SF05-X1					●	●	●
CPGW09T308SF03-X1	9.525	3.97	4.4	3.4	●	●	●
CPGW09T308SF05-X1					●	●	●

### PCD Tip with a Front Angle of 0 Degrees



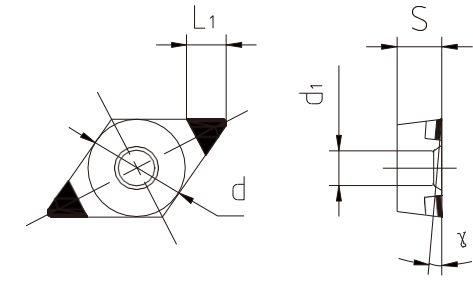
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DCGW070202SF00-X2	6.35	2.38	2.8	3.7	●	●	●
DCGW070204SF00-X2	6.35	2.38	2.8	3.4	●	●	●
DCGW070208SF00-X2	6.35	2.38	2.8	3	●	●	●
DCGW11T304SF00-X2	9.525	3.97	4.4	3.9	●	●	●
DCGW11T308SF00-X2	9.525	3.97	4.4	3.5	●	●	●

PCD Tip Front Corner



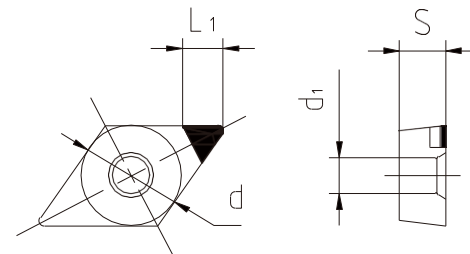
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DCGW 070202 SF03-X1	6.35	2.38	2.8	3.7	●	●	●
DCGW 070202 SF04-X1					●	●	●
DCGW 070202 SF05-X1					●	●	●
DCGW 070202 SF07-X1					●	●	●
DCGW 070202 SF10-X1					●	●	●
DCGW 070204 SF03-X1	6.35	2.38	2.8	3.4	●	●	●
DCGW 070204 SF04-X1					●	●	●
DCGW 070204 SF05-X1					●	●	●
DCGW 070204 SF07-X1					●	●	●
DCGW070204SF10-X1					●	●	●
DCGW070208SF03-X1	6.35	2.38	2.8	3	●	●	●
DCGW070208SF04-X1					●	●	●
DCGW 070208 SF05-X1					●	●	●
DCGW070208SF07-X1					●	●	●
DCGW070208SF10-X1					●	●	●
DCGW11T304SF03-X1	9.525	3.97	4.4	3.9	●	●	●
DCGW11T304SF04-X1					●	●	●
DCGW 11T304 SF05-X1					●	●	●
DCGW11T304SF07-X1					●	●	●
DCGW11T304SF10-X1					●	●	●
DCGW11T308SF03-X1	9.525	3.97	4.4	3.5	●	●	●
DCGW11T308SF04-X1					●	●	●
DCGW 11T308 SF05-X1					●	●	●
DCGW 11T308 SF07-X1					●	●	●
DCGW11T308SF10-X1					●	●	●

PCD Tip Front Corner



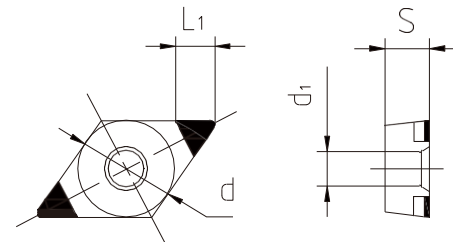
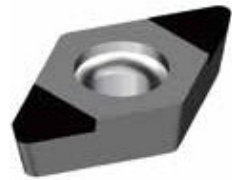
Model	Size				Material						
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302				
DCGW070202SF03-X2	6.35	2.38	2.8	3.7	●	●	●				
DCGW070202SF04-X2					●	●	●				
DCGW070202SF05-X2					●	●	●				
DCGW070202SF07-X2					●	●	●				
DCGW070202SF10-X2					●	●	●				
DCGW070202SF15-X2	6.35	2.38	2.8	3.4	●	●	●				
DCGW070204SF03-X2					●	●	●				
DCGW070204SF04-X2					●	●	●				
DCGW070204SF05-X2					●	●	●				
DCGW070204SF07-X2					●	●	●				
DCGW070204SF10-X2	6.35	2.38	2.8	3	●	●	●				
DCGW070204SF15-X2					●	●	●				
DCGW070208SF03-X2					●	●	●				
DCGW070208SF04-X2					●	●	●				
DCGW070208SF05-X2					●	●	●				
DCGW070208SF07-X2	6.35	2.38	2.8	3	●	●	●				
DCGW070208SF10-X2					●	●	●				
DCGW070208SF15-X2					●	●	●				
DCGW11T304SF03-X2					9.525	3.97	4.4	3.9	●	●	●
DCGW11T304SF04-X2									●	●	●
DCGW11T304SF05-X2	●	●	●								
DCGW11T304SF07-X2	●	●	●								
DCGW11T304SF10-X2	●	●	●								
DCGW11T304SF15-X2	9.525	3.97	4.4	3.5	●	●	●				
DCGW11T308SF03-X2					●	●	●				
DCGW11T308SF04-X2					●	●	●				
DCGW11T308SF05-X2					●	●	●				
DCGW11T308SF07-X2					●	●	●				
DCGW11T308SF10-X2	9.525	3.97	4.4	3.5	●	●	●				
DCGW11T308SF15-X2					●	●	●				

## PCD Tip and Chip-Breaking Grooves



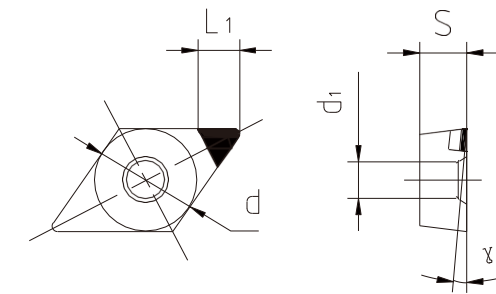
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DCGT070202SF00-X1	6.35	2.38	2.8	3.7	●	●	●
DCGT070204SF00-X1	6.35	2.38	2.8	3.4	●	●	●
DCGT11T302SF00-X1	9.525	3.97	4.4	3.9	●	●	●
DCGT11T304SF00-X1	9.525	3.97	4.4	3.9	●	●	●
DCGT11T308SF00-X1	9.525	3.97	4.4	3.5	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



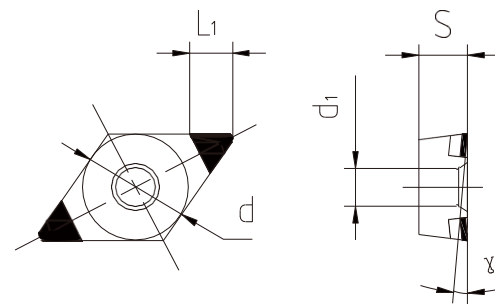
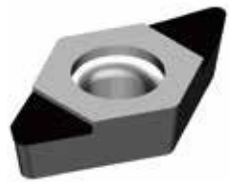
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DPGW070202SF00-X2	6.35	2.38	2.8	3.7	●	●	●
DPGW070204SF00-X2	6.35	2.38	2.8	3.4	●	●	●
DPGW070208SF00-X2	6.35	2.38	2.8	3	●	●	●
DPGW11T304SF00-X2	9.525	3.97	4.4	3.9	●	●	●
DPGW11T308SF00-X2	9.525	3.97	4.4	3.5	●	●	●

## PCD Tip Front Corner



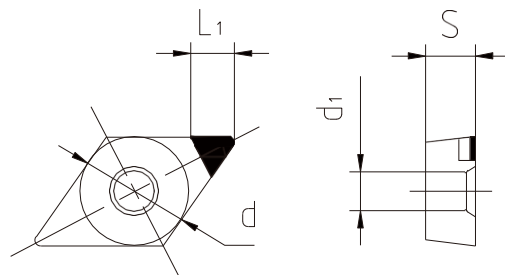
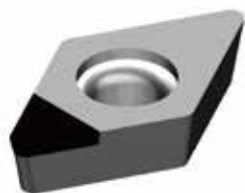
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DPGW070202SF03-X1	6.35	2.38	2.8	3.7	●	●	●
DPGW070202SF05-X1					●	●	●
DPGW070202SF07-X1					●	●	●
DPGW070202SF10-X1					●	●	●
DPGW070204SF03-X1	6.35	2.38	2.8	3.4	●	●	●
DPGW070204SF05-X1					●	●	●
DPGW070204SF07-X1					●	●	●
DPGW070204SF10-X1					●	●	●
DPGW070208SF03-X1	6.35	2.38	2.8	3	●	●	●
DPGW070208SF05-X1					●	●	●
DPGW070208SF07-X1					●	●	●
DPGW070208SF10-X1					●	●	●
DPGW11T304SF03-X1	9.525	3.97	4.4	3.9	●	●	●
DPGW11T304SF05-X1					●	●	●
DPGW11T304SF07-X1					●	●	●
DPGW11T304SF10-X1					●	●	●
DPGW11T308SF03-X1	9.525	3.97	4.4	3.5	●	●	●
DPGW11T308SF05-X1					●	●	●
DPGW11T308SF07-X1					●	●	●
DPGW11T308SF10-X1					●	●	●

### PCD Tip Front Corner



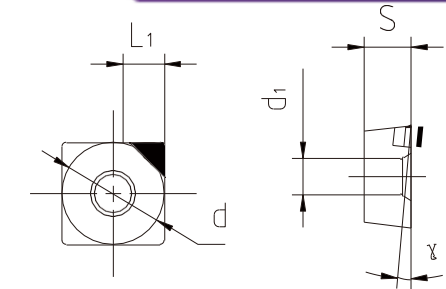
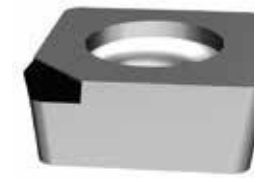
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DPGW070202SF03-X2	6.35	2.38	2.8	3.7	●	●	●
DPGW070202SF05-X2					●	●	●
DPGW070204SF03-X2	6.35	2.38	2.8	3.7	●	●	●
DPGW070204SF05-X2					●	●	●
DPGW070208SF03-X2	6.35	2.38	2.8	3.4	●	●	●
DPGW070208SF05-X2					●	●	●
DPGW11T304SF03-X2	9.525	3.97	4.4	3.9	●	●	●
DPGW11T304SF05-X2					●	●	●
DPGW11T308SF03-X2	9.525	3.97	4.4	3.5	●	●	●
DPGW11T308SF05-X2					●	●	●

### PCD Tip and Chip-Breaking Grooves



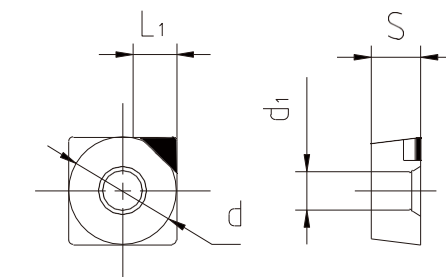
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
DPGT070202SF00-X1	6.35	2.38	2.8	3.7	●	●	●
DPGT070204SF00-X1	6.35	2.38	2.8	3.4	●	●	●
DPGT11T302SF00-X1	9.525	3.97	4.4	3.9	●	●	●
DPGT11T304SF00-X1	9.525	3.97	4.4	3.9	●	●	●
DPGT11T308SF00-X1	9.525	3.97	4.4	3.5	●	●	●

### PCD Tip Front Corner



Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGW060204SF03-X1	6.35	2.38	2.8	2.8	●	●	●
SCGW060204SF05-X1					●	●	●
SCGW060204SF07-X1					●	●	●
SCGW060208SF03-X1	6.35	2.38	2.8	2.8	●	●	●
SCGW060208SF05-X1					●	●	●
SCGW060208SF07-X1					●	●	●
SCGW09T304SF03-X1	9.525	3.97	2.8	3.1	●	●	●
SCGW09T304SF05-X1					●	●	●
SCGW09T304SF07-X1					●	●	●
SCGW09T308SF03-X1	9.525	3.97	4.4	3.1	●	●	●
SCGW09T308SF05-X1					●	●	●
SCGW09T308SF07-X1					●	●	●
SCGW120404SF03-X1	12.7	4.76	5.5	4.5	●	●	●
SCGW120404SF05-X1					●	●	●
SCGW120404SF07-X1					●	●	●
SCGW120408SF03-X1	12.7	4.76	5.5	4.5	●	●	●
SCGW120408SF05-X1					●	●	●
SCGW120408SF07-X1					●	●	●

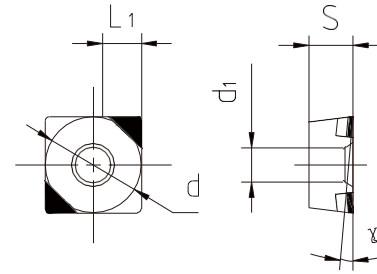
### PCD Tip with a Front Angle of 0 Degrees



Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGW060204SF00-X1	6.35	2.38	2.8	2.8	●	●	●
SCGW060208SF00-X1	6.35	2.38	2.8	2.8	●	●	●
SCGW09T304SF00-X1	9.525	3.97	2.8	3.1	●	●	●
SCGW09T308SF00-X1	9.525	3.97	4.4	3.1	●	●	●
SCGW120404SF00-X1	12.7	4.76	5.5	4.5	●	●	●
SCGW120408SF00-X1	12.7	4.76	5.5	4.5	●	●	●

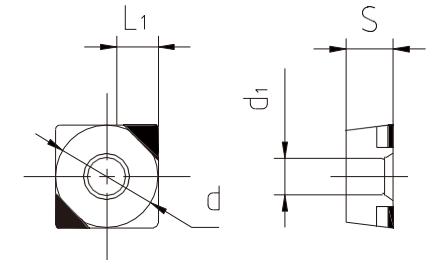


### PCD Tip Front Corner



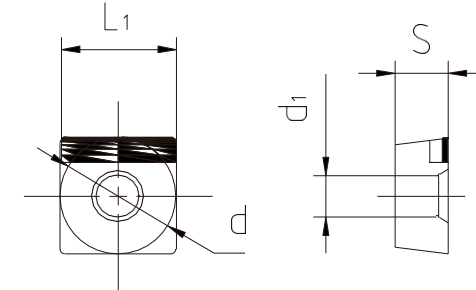
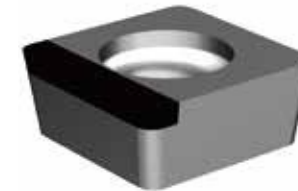
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGW060204SF03-X2	6.35	2.38	2.8	2.8	●	●	●
SCGW060204SF05-X2					●	●	●
SCGW060204SF07-X2					●	●	●
SCGW060208SF03-X2	6.35	2.38	2.8	2.8	●	●	●
SCGW060208SF05-X2					●	●	●
SCGW060208SF07-X2					●	●	●
SCGW09T304SF03-X2	9.525	3.97	2.8	3.1	●	●	●
SCGW09T304SF05-X2					●	●	●
SCGW09T304SF07-X2					●	●	●
SCGW09T308SF03-X2	9.525	3.97	4.4	3.1	●	●	●
SCGW09T308SF05-X2					●	●	●
SCGW09T308SF07-X2					●	●	●
SCGW120404SF03-X2	12.7	4.76	5.5	4.5	●	●	●
SCGW120404SF05-X2					●	●	●
SCGW120404SF07-X2					●	●	●
SCGW120408SF03-X2	12.7	4.76	5.5	4.5	●	●	●
SCGW120408SF05-X2					●	●	●
SCGW120408SF07-X2					●	●	●

### PCD Tip with a Front Angle of 0 Degrees



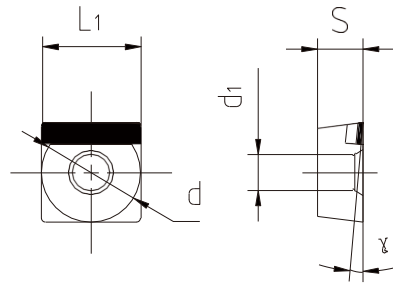
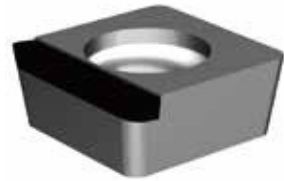
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGW060204SF00-X2	6.35	2.38	2.8	2.8	●	●	●
SCGW060208SF00-X2	6.35	2.38	2.8	2.8	●	●	●
SCGW09T304SF00-X2	9.525	3.97	2.8	3.1	●	●	●
SCGW09T308SF00-X2	9.525	3.97	4.4	3.1	●	●	●
SCGW120404SF00-X2	12.7	4.76	5.5	4.5	●	●	●
SCGW120408SF00-X2	12.7	4.76	5.5	4.5	●	●	●

### PCD Tip with a Front Angle of 0 Degrees



Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGW060204LF00-R1	6.35	2.38	2.8	6.2	●	●	●
SCGW060208LF00-R1	6.35	2.38	2.8	6.2	●	●	●
SCGW09T304LF00-R1	9.525	3.97	4.4	9.3	●	●	●
SCGW09T308LF00-R1	9.525	3.97	4.4	9.3	●	●	●
SCGW120404LF00-R1	12.7	4.76	5.5	12.4	●	●	●
SCGW120408LF00-R1	12.7	4.76	5.5	12.4	●	●	●
SCGW060204LF00-L1	6.35	2.38	2.8	6.2	●	●	●
SCGW060208LF00-L1	6.35	2.38	2.8	6.2	●	●	●
SCGW09T304LF00-L1	9.525	3.97	4.4	9.3	●	●	●
SCGW09T308LF00-L1	9.525	3.97	4.4	9.3	●	●	●
SCGW120404LF00-L1	12.7	4.76	5.5	12.4	●	●	●
SCGW120408LF00-L1	12.7	4.76	5.5	12.4	●	●	●

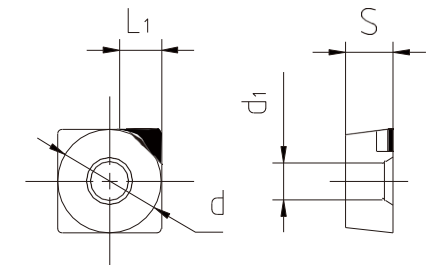
### PCD Tip Front Corner



Size	Model	d	S	d <sub>1</sub>	L <sub>1</sub>	Material		
						GT25	GT10	GT302
	SCGW060204LF03-R1					●	●	●
	SCGW060204LF04-R1	6.35	2.38	2.8	6.2	●	●	●
	SCGW060204LF05-R1					●	●	●
	SCGW060204LF07-R1					●	●	●
	SCGW060208LF03-R1					●	●	●
	SCGW060208LF04-R1	6.35	2.38	2.8	6.2	●	●	●
	SCGW060208LF05-R1					●	●	●
	SCGW060208LF07-R1					●	●	●
	SCGW09T304LF03-R1					●	●	●
	SCGW09T304LF04-R1	9.525	3.97	4.4	9.3	●	●	●
	SCGW09T304LF05-R1					●	●	●
	SCGW09T304LF07-R1					●	●	●
	SCGW09T308LF03-R1					●	●	●
	SCGW09T308LF04-R1	9.525	3.97	4.4	9.3	●	●	●
	SCGW09T308LF05-R1					●	●	●
	SCGW09T308LF07-R1					●	●	●
	SCGW120404LF03-R1					●	●	●
	SCGW120404LF04-R1	12.7	4.76	5.5	12.4	●	●	●
	SCGW120404LF05-R1					●	●	●
	SCGW120404LF07-R1					●	●	●
	SCGW120408LF03-R1					●	●	●
	SCGW120408LF04-R1	12.7	4.76	5.5	12.4	●	●	●
	SCGW120408LF05-R1					●	●	●
	SCGW120408LF07-R1					●	●	●
	SCGW060204LF03-L1					6.35	2.38	2.8
	SCGW060204LF04-L1	●	●	●				
	SCGW060204LF05-L1	●	●	●				
	SCGW060204LF07-L1	●	●	●				
	SCGW060208LF03-L1	6.35	2.38	2.8	6.2	●	●	●
	SCGW060208LF04-L1					●	●	●
	SCGW060208LF05-L1					●	●	●
	SCGW060208LF07-L1					●	●	●
	SCGW09T304LF03-L1	9.525	3.97	4.4	9.3	●	●	●
	SCGW09T304LF04-L1					●	●	●
	SCGW09T304LF05-L1					●	●	●
	SCGW09T304LF07-L1					●	●	●

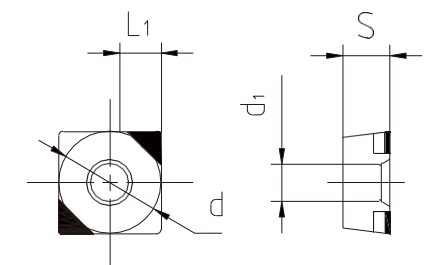
SCGW09T308LF03-L1	9.525	3.97	4.4	9.3	●	●	●
SCGW09T308LF04-L1					●	●	●
SCGW09T308LF05-L1					●	●	●
SCGW09T308LF07-L1					●	●	●
SCGW120404LF03-L1	12.7	4.76	5.5	12.4	●	●	●
SCGW120404LF04-L1					●	●	●
SCGW120404LF05-L1					●	●	●
SCGW120404LF07-L1					●	●	●
SCGW120408LF03-L1	12.7	4.76	5.5	12.4	●	●	●
SCGW120408LF04-L1					●	●	●
SCGW120408LF05-L1					●	●	●
SCGW120408LF07-L1					●	●	●

### PCD Tip and Chip-Breaking Grooves



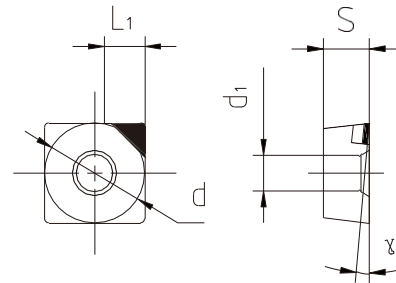
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGT09T304SF00-X1	9.525	3.97	4.4	4.4	●	●	●
SCGT09T308SF00-X1	9.525	3.97	4.4	4.3	●	●	●
SCGT120404SF00-X1	12.7	4.76	5.5	4.4	●	●	●
SCGT120408SF00-X1	12.7	4.76	5.5	4.3	●	●	●

### PCD Tip and Chip-Breaking Grooves



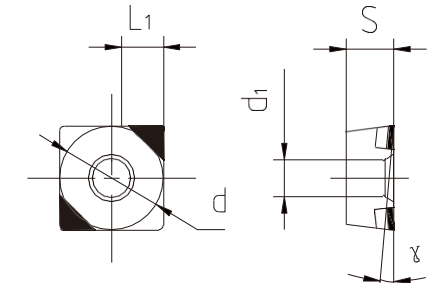
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SCGT09T304SF00-X2	9.525	3.97	4.4	4.4	●	●	●
SCGT09T308SF00-X2	9.525	3.97	4.4	4.3	●	●	●
SCGT120404SF00-X2	12.7	4.76	5.5	4.4	●	●	●
SCGT120408SF00-X2	12.7	4.76	5.5	4.3	●	●	●

### PCD Tip Front Corner



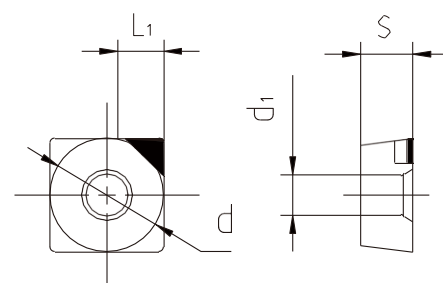
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW 060304 SF03-X1	6.35	3.18	2.8	2.8	●	●	●
SPGW 060304 SF05-X1					●	●	●
SPGW 060304 SF07-X1					●	●	●
SPGW 060308 SF03-X1	6.35	3.18	2.8	2.8	●	●	●
SPGW 060308 SF05-X1					●	●	●
SPGW 060308 SF07-X1					●	●	●
SPGW 09T304 SF03-X1	9.525	3.97	4.4	3.1	●	●	●
SPGW 09T304 SF05-X1					●	●	●
SPGW 09T304 SF07-X1					●	●	●
SPGW 09T308 SF03-X1	9.525	3.97	4.4	3.1	●	●	●
SPGW 09T308 SF05-X1					●	●	●
SPGW 09T308 SF07-X1					●	●	●

### PCD Tip Front Corner



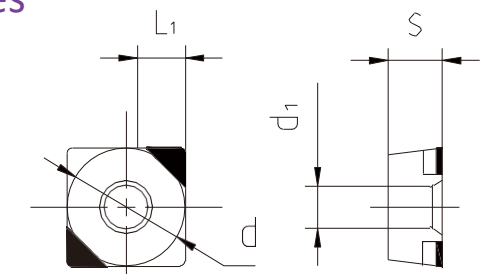
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW 060304 SF03-X2	6.35	3.18	2.8	2.8	●	●	●
SPGW 060304 SF05-X2					●	●	●
SPGW 060304 SF07-X2					●	●	●
SPGW 060308 SF03-X2	6.35	3.18	2.8	2.8	●	●	●
SPGW 060308 SF05-X2					●	●	●
SPGW 060308 SF07-X2					●	●	●
SPGW 09T304 SF03-X2	9.525	3.97	4.4	3.1	●	●	●
SPGW 09T304 SF05-X2					●	●	●
SPGW 09T304 SF07-X2					●	●	●
SPGW 09T308 SF03-X2	9.525	3.97	4.4	3.1	●	●	●
SPGW 09T308 SF05-X2					●	●	●
SPGW 09T308 SF07-X2					●	●	●

### PCD Tip with a Front Angle of 0 Degrees



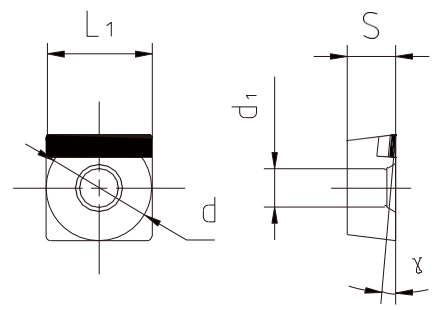
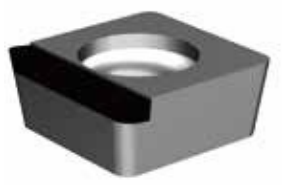
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW060304SF00-X1	6.35	3.18	2.8	2.8	●	●	●
SPGW060308SF00-X1	6.35	3.18	2.8	2.8	●	●	●
SPGW09T304SF00-X1	9.525	3.97	4.4	3.1	●	●	●
SPGW09T308SF00-X1	9.525	3.97	4.4	3.1	●	●	●

### PCD Tip with a Front Angle of 0 Degrees



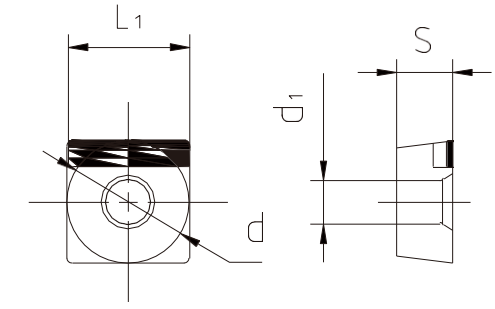
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW060304SF00-X2	6.35	3.18	2.8	2.8	●	●	●
SPGW060308SF00-X2	6.35	3.18	2.8	2.8	●	●	●
SPGW09T304SF00-X2	9.525	3.97	4.4	3.1	●	●	●
SPGW09T308SF00-X2	9.525	3.97	4.4	3.1	●	●	●

### PCD Tip Front Corner



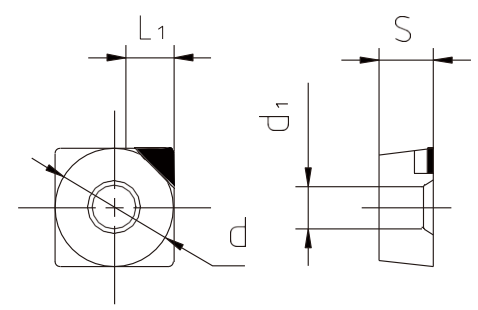
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW060304LF03-R1	6.35	3.18	2.8	6.2	●	●	●
SPGW060304LF04-R1					●	●	●
SPGW060304LF05-R1					●	●	●
SPGW060304LF07-R1					●	●	●
SPGW060308LF03-R1	6.35	3.18	2.8	6.2	●	●	●
SPGW060308LF04-R1					●	●	●
SPGW060308LF05-R1					●	●	●
SPGW060308LF07-R1					●	●	●
SPGW09T304LF03-R1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T304LF04-R1					●	●	●
SPGW09T304LF05-R1					●	●	●
SPGW09T304LF07-R1					●	●	●
SPGW09T308LF03-R1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T308LF04-R1					●	●	●
SPGW09T308LF05-R1					●	●	●
SPGW09T308LF07-R1					●	●	●
SPGW060304LF03-L1	6.35	3.18	2.8	6.2	●	●	●
SPGW060304LF04-L1					●	●	●
SPGW060304LF05-L1					●	●	●
SPGW060304LF07-L1					●	●	●
SPGW060308LF03-L1	6.35	3.18	2.8	6.2	●	●	●
SPGW060308LF04-L1					●	●	●
SPGW060308LF05-L1					●	●	●
SPGW060308LF07-L1					●	●	●
SPGW09T304LF03-L1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T304LF04-L1					●	●	●
SPGW09T304LF05-L1					●	●	●
SPGW09T304LF07-L1					●	●	●
SPGW09T308LF03-L1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T308LF04-L1					●	●	●
SPGW09T308LF05-L1					●	●	●
SPGW09T308LF07-L1					●	●	●

### PCD Tip with a Front Angle of 0 Degrees



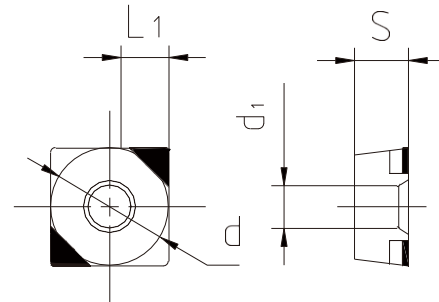
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGW060304LF00-R1	6.35	3.18	2.8	6.2	●	●	●
SPGW060308LF00-R1	6.35	3.18	2.8	6.2	●	●	●
SPGW09T304LF00-R1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T308LF00-R1	9.525	3.97	4.4	9.3	●	●	●
SPGW060304LF00-L1	6.35	3.18	2.8	6.2	●	●	●
SPGW060308LF00-L1	6.35	3.18	2.8	6.2	●	●	●
SPGW09T304LF00-L1	9.525	3.97	4.4	9.3	●	●	●
SPGW09T308LF00-L1	9.525	3.97	4.4	9.3	●	●	●

### PCD Tip and Chip-Breaking Grooves



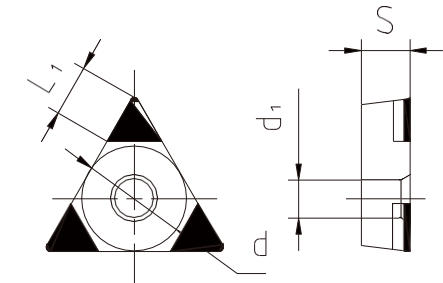
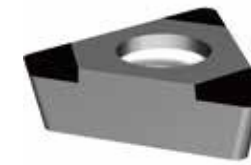
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGT060304SF00-X1	6.35	3.18	2.8	2.8	●	●	●
SPGT060308SF00-X1	6.35	3.18	2.8	2.8	●	●	●
SPGT09T304SF00-X1	9.525	3.97	4.4	3.1	●	●	●
SPGT09T308SF00-X1	9.525	3.97	4.4	3.1	●	●	●

## PCD Tip and Chip-Breaking Grooves



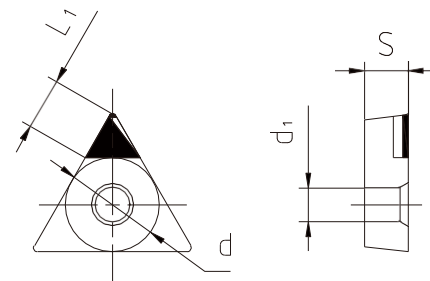
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
SPGT060304SF00-X2	6.35	3.18	2.8	2.8	●	●	●
SPGT060308SF00-X2	6.35	3.18	2.8	2.8	●	●	●
SPGT09T304SF00-X2	9.525	3.97	4.4	3.1	●	●	●
SPGT09T308SF00-X2	9.525	3.97	4.4	3.1	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



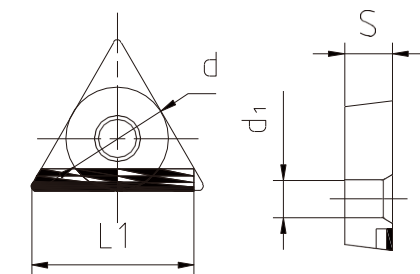
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TCGW090204SF00-X3	5.56	2.38	2.5	3.4	●	●	●
TCGW090208SF00-X3	5.56	2.38	2.5	3.1	●	●	●
TCGW110204SF00-X3	6.35	2.38	2.8	3.8	●	●	●
TCGW110208SF00-X3	6.35	2.38	2.8	3.5	●	●	●
TCGW16T304SF00-X3	9.525	3.97	4.4	5.4	●	●	●
TCGW16T308SF00-X3	9.525	3.97	4.4	5.1	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



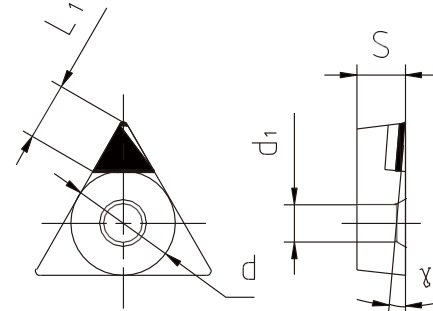
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TCGW090204SF00-X1	5.56	2.38	2.5	3.4	●	●	●
TCGW090208SF00-X1	5.56	2.38	2.5	3.1	●	●	●
TCGW110204SF00-X1	6.35	2.38	2.8	3.8	●	●	●
TCGW110208SF00-X1	6.35	2.38	2.8	3.5	●	●	●
TCGW16T304SF00-X1	9.525	3.97	4.4	5.4	●	●	●
TCGW16T308SF00-X1	9.525	3.97	4.4	5.1	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



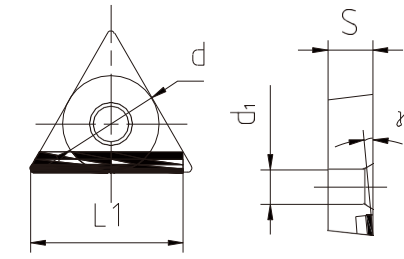
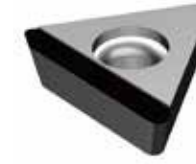
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TCGW090204LF00-R1	5.56	2.38	2.5	8.6	●	●	●
TCGW090208LF00-R1	5.56	2.38	2.5	8.3	●	●	●
TCGW110204LF00-R1	6.35	2.38	2.8	9.8	●	●	●
TCGW110208LF00-R1	6.35	2.38	2.8	9.5	●	●	●
TCGW16T304LF00-R1	9.525	3.97	4.4	15	●	●	●
TCGW16T304LF00-R1	9.525	3.97	4.4	14.7	●	●	●
TCGW090204LF00-L1	5.56	2.38	2.5	8.6	●	●	●
TCGW090208LF00-L1	5.56	2.38	2.5	8.3	●	●	●
TCGW110204LF00-L1	6.35	2.38	2.8	9.8	●	●	●
TCGW110208LF00-L1	6.35	2.38	2.8	9.5	●	●	●
TCGW16T304LF00-L1	9.525	3.97	4.4	15	●	●	●
TCGW16T308LF00-L1	9.525	3.97	4.4	14.7	●	●	●

### PCD Tip Front Corner



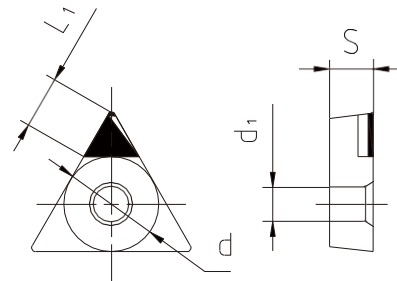
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TCGW 090204 SF03-X1	5.56	2.38	2.5	3.4	●	●	●
TCGW 090204 SF04-X1					●	●	●
TCGW 090204 SF05-X1					●	●	●
TCGW 090204 SF07-X1					●	●	●
TCGW 090204 SF10-X1					●	●	●
TCGW 090204 SF15-X1					●	●	●
TCGW 090208 SF03-X1	5.56	2.38	2.5	3.1	●	●	●
TCGW 090208 SF04-X1					●	●	●
TCGW 090208 SF05-X1					●	●	●
TCGW 090208 SF07-X1					●	●	●
TCGW 090208 SF10-X1					●	●	●
TCGW 090208 SF15-X1					●	●	●
TCGW 110204 SF03-X1	6.35	2.38	2.8	3.8	●	●	●
TCGW 110204 SF04-X1					●	●	●
TCGW 110204 SF05-X1					●	●	●
TCGW110204SF07-X1					●	●	●
TCGW110204SF10-X1					●	●	●
TCGW110204SF15-X1					●	●	●
TCGW110208SF03-X1	6.35	2.38	2.8	3.5	●	●	●
TCGW110208SF04-X1					●	●	●
TCGW 110208 SF05-X1					●	●	●
TCGW 110208 SF07-X1					●	●	●
TCGW110208SF10-X1					●	●	●
TCGW110208SF15-X1					●	●	●
TCGW16T304SF03-X1	9.525	3.97	4.4	5.4	●	●	●
TCGW16T304SF04-X1					●	●	●
TCGW16T304SF05-X1					●	●	●
TCGW 16T304 SF07-X1					●	●	●
TCGW16T304SF10-X1					●	●	●
TCGW16T304SF15-X1					●	●	●
TCGW16T308SF03-X1	9.525	3.97	4.4	5.1	●	●	●
TCGW16T308SF04-X1					●	●	●
TCGW16T308SF05-X1					●	●	●
TCGW16T308SF07-X1					●	●	●
TCGW 16T308 SF10-X1					●	●	●
TCGW 16T308 SF15-X1					●	●	●

### PCD Tip Front Corner



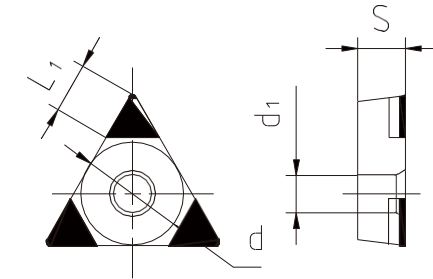
Model	Size				Material						
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302				
TCGT090204LF05-R1	5.56	2.38	2.5	8.6	●	●	●				
TCGT090204LF07-R1					●	●	●				
TCGT090204LF10-R1					●	●	●				
TCGT090208LF05-R1					5.56	2.38	2.5	8.3	●	●	●
TCGT090208LF07-R1									●	●	●
TCGT090208LF10-R1									●	●	●
TCGT110204LF05-R1	6.35	2.38	2.8	9.8					●	●	●
TCGT110204LF07-R1									●	●	●
TCGT110204LF10-R1									●	●	●
TCGT110208LF05-R1					6.35	2.38	2.8	9.5	●	●	●
TCGT110208LF07-R1									●	●	●
TCGT110208LF10-R1									●	●	●
TCGT16T304LF05-R1	9.525	3.97	4.4	15					●	●	●
TCGT16T304LF07-R1									●	●	●
TCGT16T304LF10-R1									●	●	●
TCGT16T308LF05-R1					9.525	3.97	4.4	14.7	●	●	●
TCGT16T308LF07-R1									●	●	●
TCGT16T308LF10-R1									●	●	●
TCGT090204LF05-L1	5.56	2.38	2.5	8.6					●	●	●
TCGT090204LF07-L1									●	●	●
TCGT090204LF10-L1									●	●	●
TCGT090208LF05-L1					5.56	2.38	2.5	8.3	●	●	●
TCGT090208LF07-L1									●	●	●
TCGT090208LF10-L1									●	●	●
TCGT110204LF05-L1	6.35	2.38	2.8	9.8					●	●	●
TCGT110204LF07-L1									●	●	●
TCGT110204LF10-L1									●	●	●
TCGT110208LF05-L1					6.35	2.38	2.8	9.5	●	●	●
TCGT110208LF07-L1									●	●	●
TCGT110208LF10-L1									●	●	●
TCGT16T304LF05-L1	9.525	3.97	4.4	15					●	●	●
TCGT16T304LF07-L1									●	●	●
TCGT16T304LF10-L1									●	●	●
TCGT16T308LF05-L1					9.525	3.97	4.4	14.7	●	●	●
TCGT16T308LF07-L1									●	●	●
TCGT16T308LF10-L1									●	●	●

## PCD Tip and Chip-Breaking Grooves



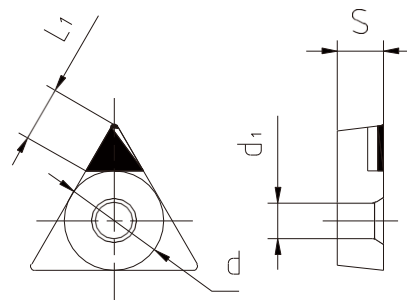
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TCGT110202SF00-X1	6.35	2.38	2.8	3.7	●	●	●
TCGT110204SF00-X1	6.35	2.38	2.8	3.4	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



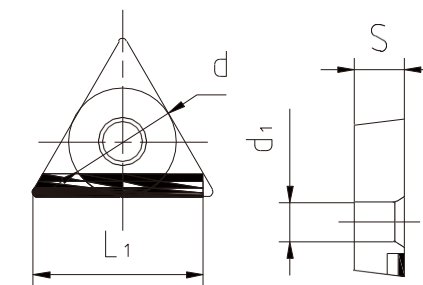
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TPGW090204SF00-X3	5.56	2.38	2.4	3.4	●	●	●
TPGW090208SF00-X3	5.56	2.38	2.4	3.1	●	●	●
TPGW110204SF00-X3	6.35	2.38	2.9	3.8	●	●	●
TPGW110208SF00-X3	6.35	2.38	2.9	3.5	●	●	●
TPGW16T304SF00-X3	9.525	3.97	4.4	5.4	●	●	●
TPGW16T308SF00-X3	9.525	3.97	4.4	5.1	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



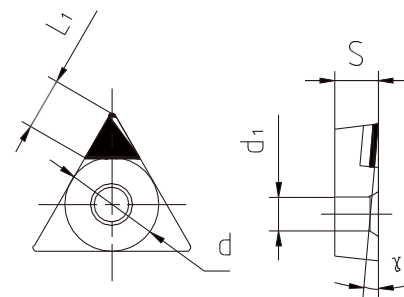
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TPGW090204SF00-X1	5.56	2.38	2.4	3.4	●	●	●
TPGW090208SF00-X1	5.56	2.38	2.4	3.1	●	●	●
TPGW110204SF00-X1	6.35	2.38	2.9	3.8	●	●	●
TPGW110208SF00-X1	6.35	2.38	2.9	3.5	●	●	●
TPGW16T304SF00-X1	9.525	3.97	4.4	5.4	●	●	●
TPGW16T308SF00-X1	9.525	3.97	4.4	5.1	●	●	●

## PCD Tip with a Front Angle of 0 Degrees



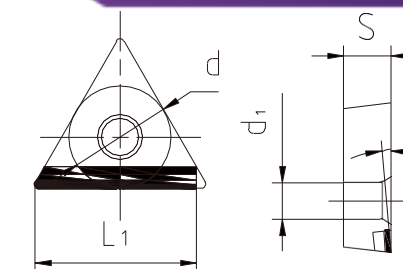
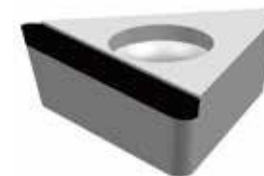
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TPGW090204LF00-R1	5.56	2.38	2.5	8.6	●	●	●
TPGW090208LF00-R1	5.56	2.38	2.5	8.3	●	●	●
TPGW110204LF00-R1	6.35	2.38	2.8	9.8	●	●	●
TPGW110208LF00-R1	6.35	2.38	2.8	9.5	●	●	●
TPGW16T304LF00-R1	9.525	3.97	4.4	15	●	●	●
TPGW16T308LF00-R1	9.525	3.97	4.4	14.7	●	●	●
TPGW090204LF00-L1	5.56	2.38	2.5	8.6	●	●	●
TPGW090208LF00-L1	5.56	2.38	2.5	8.3	●	●	●
TPGW110204LF00-L1	6.35	2.38	2.8	9.8	●	●	●
TPGW110208LF00-L1	6.35	2.38	2.8	9.5	●	●	●
TPGW16T304LF00-L1	9.525	3.97	4.4	15	●	●	●
TPGW16T308LF00-L1	9.525	3.97	4.4	14.7	●	●	●

### PCD Tip Front Corner



Model	Size				Material		
	d	S	d <sub>i</sub>	L <sub>1</sub>	GT25	GT10	GT302
TPGW090204SF03-X1	5.56	2.38	2.4	3.4	●	●	●
TPGW090204SF04-X1					●	●	●
TPGW090204SF05-X1					●	●	●
TPGW090204SF07-X1					●	●	●
TPGW090204SF10-X1					●	●	●
TPGW090204SF15-X1					●	●	●
TPGW090208SF03-X1	5.56	2.38	2.4	3.1	●	●	●
TPGW090208SF04-X1					●	●	●
TPGW090208SF05-X1					●	●	●
TPGW090208SF07-X1					●	●	●
TPGW090208SF10-X1					●	●	●
TPGW090208SF15-X1					●	●	●
TPGW110204SF03-X1	6.35	2.38	2.9	3.8	●	●	●
TPGW110204SF04-X1					●	●	●
TPGW110204SF05-X1					●	●	●
TPGW110204SF07-X1					●	●	●
TPGW110204SF10-X1					●	●	●
TPGW110204SF15-X1					●	●	●
TPGW110208SF03-X1	6.35	2.38	2.9	3.5	●	●	●
TPGW110208SF04-X1					●	●	●
TPGW110208SF05-X1					●	●	●
TPGW110208SF07-X1					●	●	●
TPGW110208SF10-X1					●	●	●
TPGW110208SF15-X1					●	●	●
TPGW16T304SF03-X1	9.525	3.97	4.4	5.4	●	●	●
TPGW16T304SF04-X1					●	●	●
TPGW16T304SF05-X1					●	●	●
TPGW16T304SF07-X1					●	●	●
TPGW16T304SF10-X1					●	●	●
TPGW16T304SF15-X1					●	●	●
TPGW16T308SF03-X1	9.525	3.97	4.4	5.1	●	●	●
TPGW16T308SF04-X1					●	●	●
TPGW16T308SF05-X1					●	●	●
TPGW16T308SF07-X1					●	●	●
TPGW16T308SF10-X1					●	●	●
TPGW16T308SF15-X1					●	●	●

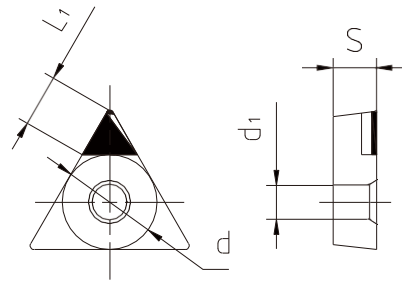
### PCD Tip Front Corner



Model	Size				Material						
	d	S	d <sub>i</sub>	L <sub>1</sub>	GT25	GT10	GT302				
TPGW090204LF05-R1	5.56	2.38	2.5	8.6	●	●	●				
TPGW090204LF07-R1					●	●	●				
TPGW090204LF10-R1					●	●	●				
TPGW090208LF05-R1					●	●	●				
TPGW090208LF07-R1	5.56	2.38	2.5	8.3	●	●	●				
TPGW090208LF10-R1					●	●	●				
TPGW110204LF05-R1					●	●	●				
TPGW110204LF07-R1					●	●	●				
TPGW110204LF10-R1	6.35	2.38	2.8	9.8	●	●	●				
TPGW110208LF05-R1					●	●	●				
TPGW110208LF07-R1					●	●	●				
TPGW110208LF10-R1					●	●	●				
TPGW16T304LF05-R1	9.525	3.97	4.4	15	●	●	●				
TPGW16T304LF07-R1					●	●	●				
TPGW16T304LF10-R1					●	●	●				
TPGW16T308LF05-R1					●	●	●				
TPGW16T308LF07-R1	9.525	3.97	4.4	14.7	●	●	●				
TPGW16T308LF10-R1					●	●	●				
TPGW090204LF05-L1					5.56	2.38	2.5	8.6	●	●	●
TPGW090204LF07-L1									●	●	●
TPGW090204LF10-L1	●	●	●								
TPGW090208LF05-L1	●	●	●								
TPGW090208LF07-L1	5.56	2.38	2.5	8.3	●	●	●				
TPGW090208LF10-L1					●	●	●				
TPGW110204LF05-L1					6.35	2.38	2.8	9.8	●	●	●
TPGW110204LF07-L1									●	●	●
TPGW110204LF10-L1	●	●	●								
TPGW110208LF05-L1	6.35	2.38	2.8	9.5					●	●	●
TPGW110208LF07-L1					●	●	●				
TPGW110208LF10-L1					●	●	●				
TPGW16T304LF05-L1					9.525	3.97	4.4	15	●	●	●
TPGW16T304LF07-L1	●	●	●								
TPGW16T304LF10-L1	●	●	●								
TPGW16T308LF05-L1	9.525	3.97	4.4	14.7					●	●	●
TPGW16T308LF07-L1					●	●	●				
TPGW16T308LF10-L1					●	●	●				

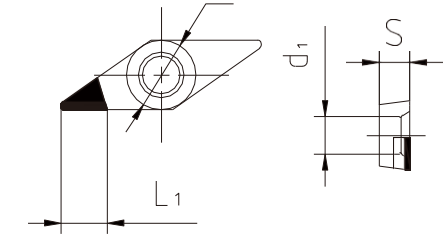
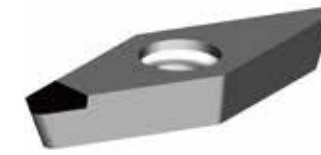


### PCD Tip and Chip-Breaking Grooves



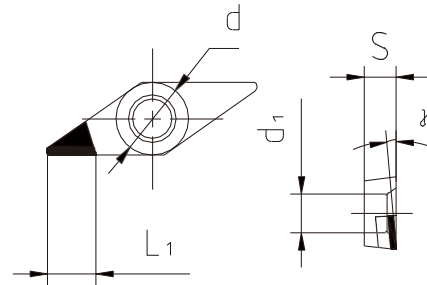
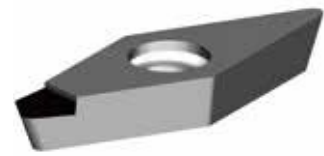
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
TPGT110202SF00-X1	6.35	2.38	2.8	3.7	●	●	●
TPGT110204SF00-X1	6.35	2.38	2.8	3.4	●	●	●

### PCD Tip with a Front Angle of 0 Degrees



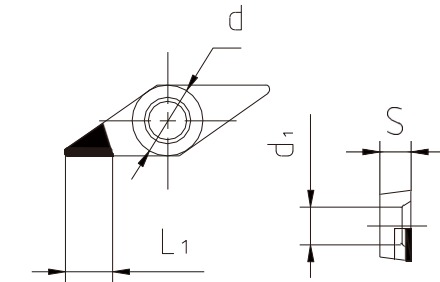
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VBGW110304SF00-X1	6.35	3.18	2.9	4.6	●	●	●
VBGW110308SF00-X1	6.35	3.18	2.9	3.9	●	●	●
VBGW160404SF00-X1	9.525	4.76	4.4	5.5	●	●	●
VBGW160408SF00-X1	9.525	4.76	4.4	5	●	●	●

### PCD Tip Front Corner



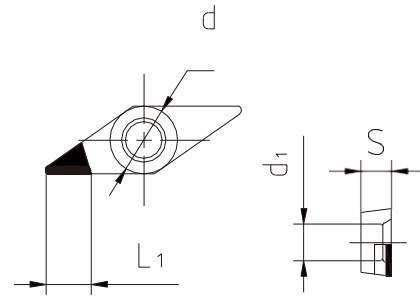
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VBGW110304SF05-X1	6.35	3.18	2.9	4.6	●	●	●
VBGW110304SF07-X1					●	●	●
VBGW110304SF10-X1					●	●	●
VBGW110308SF05-X1	6.35	3.18	2.9	3.9	●	●	●
VBGW110308SF07-X1					●	●	●
VBGW110308SF10-X1					●	●	●
VBGW160404SF05-X1	9.525	4.76	4.4	5.5	●	●	●
VBGW160404SF07-X1					●	●	●
VBGW160404SF10-X1					●	●	●
VBGW160408SF05-X1	9.525	4.76	4.4	5	●	●	●
VBGW160408SF07-X1					●	●	●
VBGW160408SF10-X1					●	●	●

### PCD Tip and Chip-Breaking Grooves



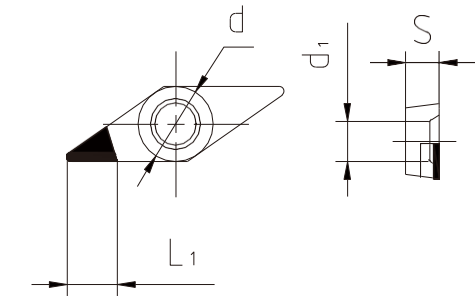
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VBGT110304SF00-X1	6.35	3.18	2.9	4.6	●	●	●
VBGT110308SF00-X1	6.35	3.18	2.9	3.9	●	●	●
VBGT160404SF00-X1	9.525	4.76	4.4	5.5	●	●	●
VBGT160408SF00-X1	9.525	4.76	4.4	5	●	●	●

### PCD tip With a Front Angle of 0 Degrees



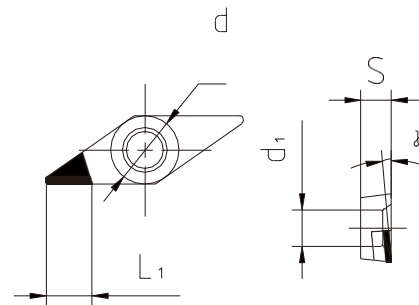
Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VCGW110304SF00-X1	6.35	3.18	2.9	4.6	●	●	●
VCGW110308SF00-X1	6.35	3.18	2.9	3.9	●	●	●
VCGW160404SF00-X1	9.525	4.76	4.4	5.5	●	●	●
VCGW160408SF00-X1	9.525	4.76	4.4	5	●	●	●

### PCD Tip and Chip-Breaking Grooves



Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VCGW110302SF00-X1	6.35	3.18	2.8	4.6	●	●	●
VCGW110304SF00-X1	6.35	3.18	2.8	3.9	●	●	●
VCGW160404SF00-X1	9.525	4.76	4.4	5.5	●	●	●
VCGW160408SF00-X1	9.525	4.76	4.4	5	●	●	●

### PCD Tip Front Corner



Model	Size				Material		
	d	S	d <sub>1</sub>	L <sub>1</sub>	GT25	GT10	GT302
VCGW110304SF05-X1	6.35	3.18	2.9	4.6	●	●	●
VCGW110304SF07-X1					●	●	●
VCGW110304SF10-X1					●	●	●
VCGW110308SF05-X1	6.35	3.18	2.9	3.9	●	●	●
VCGW110308SF07-X1					●	●	●
VCGW110308SF10-X1					●	●	●
VCGW160404SF05-X1	9.525	4.76	4.4	5.5	●	●	●
VCGW160404SF07-X1					●	●	●
VCGW160404SF10-X1					●	●	●
VCGW160408SF05-X1	9.525	4.76	4.4	5	●	●	●
VCGW160408SF07-X1					●	●	●
VCGW160408SF10-X1					●	●	●

**T** | **C** | **C** | **G** | **W** | **12**  
Table 0 | Table 1 | Table 2 | Table 3 | Table 4 | Table 5

**02** | **04** | **W** | **D** | **00** | **1**  
Table 6 | Table 7 | Table 8 | Table 9 | Table 10 | Table 11

**CBN Insert model**

**1-Insert Shape**

Mark	Blade Shape	
C	Lozenge	
D		
V		
S	Square	
T	Positive Triangle	
R	Rotundity	
W	Iso-Angle Hexagon	

**2-Back Corner**

Mark	The Back Corner
B	
C	
N	
P	
0	Other

The band indicates that there are also cases where 10 degrees are used

**0-Overall**

Mark	Overall
T	One-on-one
	Welded
Z	Composite

**4-Hole Type**

Mark	Hole Type	
N	No holes	
A	Cylinder holes	
B	One-sided inclination cylinder hole	
W		
T		
C	Double-sided inclination cylinder hole	
Q		
X		Special

**3-Tip Height Allows Tolerances**

Mark	High Tip Allows Tolerances	The Inner Cut Circle Allows Tolerances	The Thickness Allows Tolerances
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
M	±0.08~±0.2	±0.05~±0.15	±0.13

**6-Thickness**

Mark	Thickness
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

**5-Cut Round**

Shape	Mark	Long Cutting Edge	Inscribed Circle	Shape	Mark	Long Cutting Edge	Inscribed Circle	Shape	Mark	Long Cutting Edge	Inscribed Circle
	C	05	5.64		S	05	5.56		R	08	8
		06	6.4			06	6.35			10	10
		08	8			08	7.94			12	12
		09	9.7			09	9.525			12	12.7
		12	12.9			12	12.7			15	15.875
		16	16.1			15	15.875			16	16
		19	19.3			19	19.05			19	19.05
	D	07	7.7		T	06	6.9		W	04	4.3
		09	9.7			08	8.2			05	5.4
		11	11.6			09	9.6			06	6.5
		15	15.5			11	11			08	8.7
		19	19.4			16	16.5			10	10.9
	V	08	8.3								
		09	9.7								
		11	11.1								
		16	16.6								

**7-Tip Arc**

Mark	Knife Tip Arc
00	0
01	0.1
02	0.2
04	0.4
08	0.8
10	1
12	1.2
16	1.6
24	2.4
M O	Round (metric)

**8-Inverted Width**

The Width of the Inverted Edge	
Mark	Size (mm)
U	0.1
V	0.15
W	0.2
X	0.25
Y	0.3
Z	0.35

**9-Invert Angle**

Inverted Angle	
Mark	Angle
B	5°
P	10°
D	15°
E	20°
F	25°
G	30°

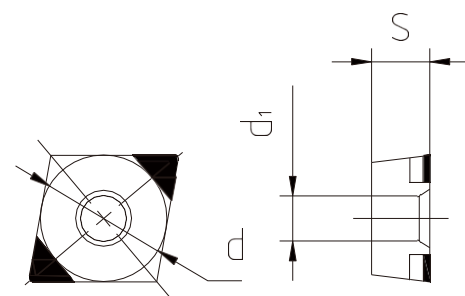
**10-Passivation**

Mark	Size
05	0.005
10	0.01
15	0.015
20	0.02
25	0.025

**11-Number of Heads**

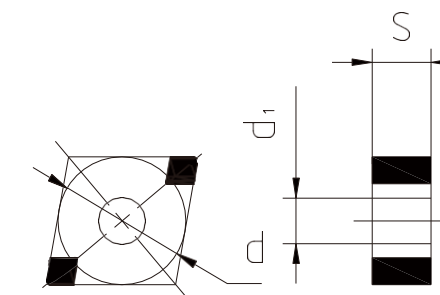
Mark	Number of Heads
1	1
2	2
3	3
4	4
6	6
8	8

### CBN Tip Double Edge



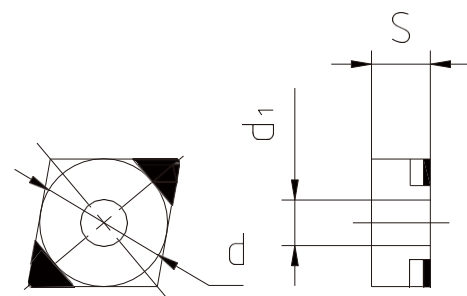
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
CCGW060202VE10-2	6.35	2.38	2.8	●	●	●	●
CCGW060202WE10-2				●	●	●	●
CCGW060204VE10-2	6.35	2.38	2.8	●	●	●	●
CCGW060204WE10-2				●	●	●	●
CCGW09T302VE10-2	9.525	3.97	4.4	●	●	●	●
CCGW09T302WE10-2				●	●	●	●
CCGW09T304VE10-2	9.525	3.97	4.4	●	●	●	●
CCGW09T304WE10-2				●	●	●	●
CCGW09T308VE10-2	9.525	3.97	4.4	●	●	●	●
CCGW09T308WE10-2				●	●	●	●

### CBN Tip and Four Edge



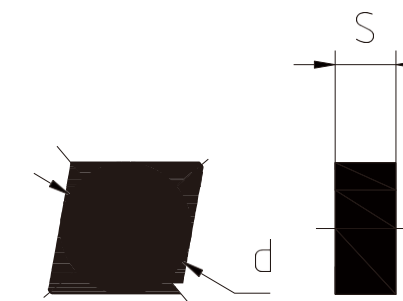
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
CNGA 120404 VD10-4	12.7	4.76	5.16	●	●	●	●
CNGA 120404 VE10-4				●	●	●	●
CNGA 120408 VD10-4	12.7	4.76	5.16	●	●	●	●
CNGA 120408 VE10-4				●	●	●	●
CNGA 120412 VD10-4	12.7	4.76	5.16	●	●	●	●
CNGA 120412 VE10-4				●	●	●	●

### CBN Tip Double Edge



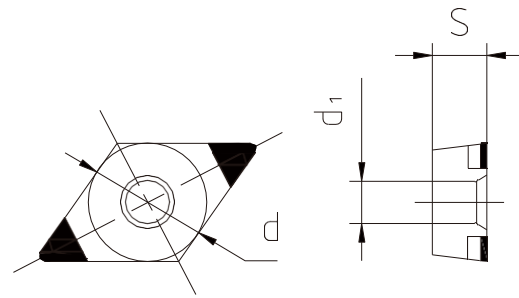
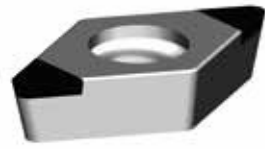
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
CNGA120404VD10-2	12.7	4.76	5.16	●	●	●	●
CNGA120404VE10-2				●	●	●	●
CNGA120408VD10-2	12.7	4.76	5.16	●	●	●	●
CNGA120408VE10-2				●	●	●	●
CNGA120412VD10-2	12.7	4.76	5.16	●	●	●	●
CNGA120412VE10-2				●	●	●	●

### CBN Solid Insert



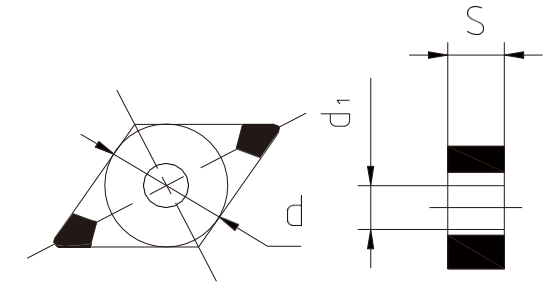
Model	Size		Material			
	d	S	GT96S	GT90	GT70	GT50
TCNGN090304VE10-4	9.525	3.18	●	●	●	●
TCNGN090304WE10-4			●	●	●	●
TCNGN090304XE10-4			●	●	●	●
TCNGN090308VE10-4	9.525	3.18	●	●	●	●
TCNGN090308WE10-4			●	●	●	●
TCNGN090308XE10-4			●	●	●	●
TCNGN090312VE10-4	9.525	3.18	●	●	●	●
TCNGN090312WE10-4			●	●	●	●
TCNGN090312XE10-4			●	●	●	●
TCNGN120408VE10-4	12.7	4.76	●	●	●	●
TCNGN120408WE10-4			●	●	●	●
TCNGN120408XE10-4			●	●	●	●
TCNGN120412VE10-4	12.7	4.76	●	●	●	●
TCNGN120412WE10-4			●	●	●	●
TCNGN120412XE10-4			●	●	●	●

## CBN Tip Double Edge



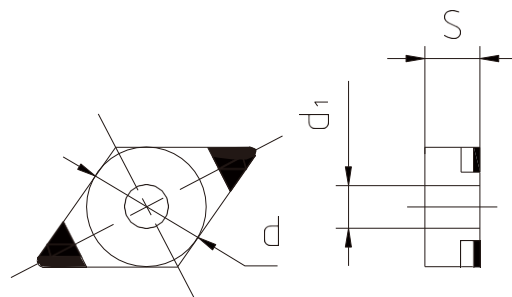
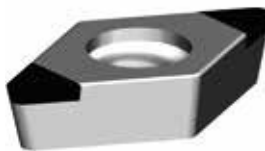
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
DCGW070202VD05-2	6.35	2.38	2.8	●	●	●	●
DCGW070202VE05-2				●	●	●	●
DCGW070204VD05-2	6.35	2.38	2.8	●	●	●	●
DCGW070204VE05-2				●	●	●	●
DCGW070208VD05-2	6.35	2.38	2.8	●	●	●	●
DCGW070208VE05-2				●	●	●	●
DCGW11T302VD05-2	9.525	3.97	4.4	●	●	●	●
DCGW11T302VE05-2				●	●	●	●
DCGW11T304VD05-2	9.525	3.97	4.4	●	●	●	●
DCGW11T304VE05-2				●	●	●	●
DCGW11T308VD05-2	9.525	3.97	4.4	●	●	●	●
DCGW11T308VE05-2				●	●	●	●

## CBN Tip Four Edge



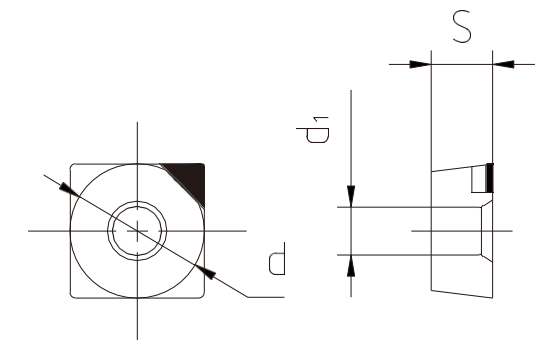
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
DNGA150404VD05-4	12.7	4.76	5.16	●	●	●	●
DNGA150404WD05-4				●	●	●	●
DNGA150408VD05-4	12.7	4.76	5.16	●	●	●	●
DNGA150408WD05-4				●	●	●	●
DNGA150412VD05-4	12.7	4.76	5.16	●	●	●	●
DNGA150412WD05-4				●	●	●	●
DNGA150604VD05-4	12.7	6.35	5.16	●	●	●	●
DNGA150604WD05-4				●	●	●	●
DNGA150608VD05-4	12.7	6.35	5.16	●	●	●	●
DNGA150608WD05-4				●	●	●	●
DNGA150612VD05-4	12.7	6.35	5.16	●	●	●	●
DNGA150612WD05-4				●	●	●	●

## CBN Tip Double Edge



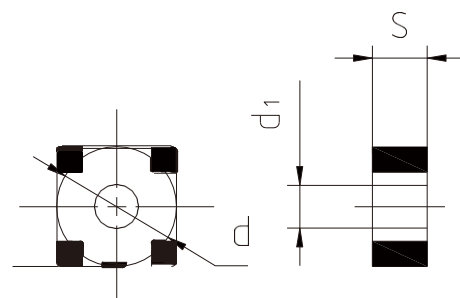
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
DNGA150404VD05-2	12.7	4.76	5.16	●	●	●	●
DNGA150404WD05-2				●	●	●	●
DNGA150408VD05-2	12.7	4.76	5.16	●	●	●	●
DNGA150408WD05-2				●	●	●	●
DNGA150412VD05-2	12.7	4.76	5.16	●	●	●	●
DNGA150412WD05-2				●	●	●	●
DNGA150604VD05-2	12.7	6.35	5.16	●	●	●	●
DNGA150604WD05-2				●	●	●	●
DNGA150608VD05-2	12.7	6.35	5.16	●	●	●	●
DNGA150608WD05-2				●	●	●	●
DNGA150612VD05-2	12.7	6.35	5.16	●	●	●	●
DNGA150612WD05-2				●	●	●	●

## CBN tip Single Edge



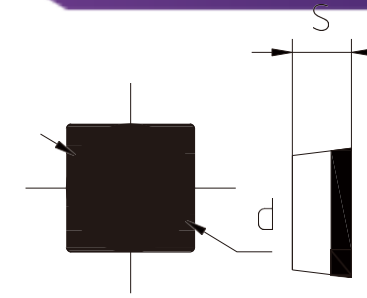
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
SCGW09T304VD05-1	9.525	3.97	4.4	●	●	●	●
SCGW09T304VE05-1				●	●	●	●
SCGW09T308VD05-1	9.525	3.97	4.4	●	●	●	●
SCGW09T308VE05-1				●	●	●	●

### CBN Tip Eight Blade



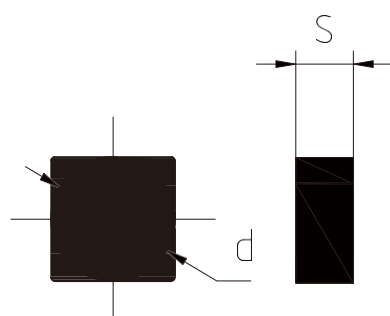
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
SNGA120404VE10-8	12.7	4.76	5.16	●	●	●	●
SNGA120404WE10-8				●	●	●	●
SNGA120408VE10-8	12.7	4.76	5.16	●	●	●	●
SNGA120408WE10-8				●	●	●	●
SNGA120412VE10-8	12.7	4.76	5.16	●	●	●	●
SNGA120412WE10-8				●	●	●	●

### CBN Full Top



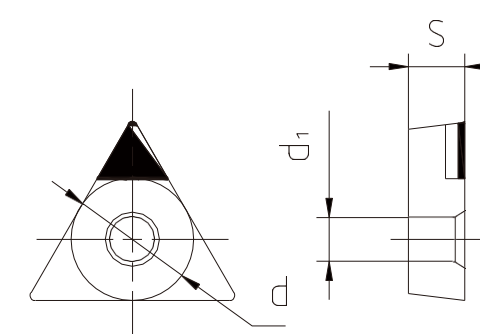
Model	Size		Material			
	d	S	GT96S	GT90	GT70	GT50
ZSPGN090308VE05-4	9.525	3.18	●	●	●	●
ZSPGN090308WE05-4			●	●	●	●
ZSPGN090312VE05-4	9.525	3.18	●	●	●	●
ZSPGN090312WE05-4			●	●	●	●

### CBN Solid Insert



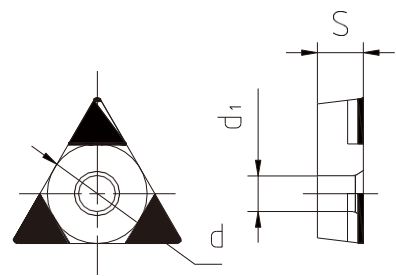
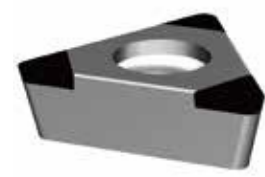
Model	Size		Material			
	d	S	GT96S	GT90	GT70	GT50
TSNGN090308WE15-8	9.525	3.18	●	●	●	●
TSNGN090308WF15-8			●	●	●	●
TSNGN090308XE15-8			●	●	●	●
TSNGN090308XF15-8			●	●	●	●
TSNGN090312WE15-8	9.525	3.18	●	●	●	●
TSNGN090312WF15-8			●	●	●	●
TSNGN090312XE15-8			●	●	●	●
TSNGN090312XF15-8			●	●	●	●
TSNGN120408WE15-8	12.7	4.76	●	●	●	●
TSNGN120408WF15-8			●	●	●	●
TSNGN120408XE15-8			●	●	●	●
TSNGN120408XF15-8			●	●	●	●
TSNGN120412WE15-8	12.7	4.76	●	●	●	●
TSNGN120412WF15-8			●	●	●	●
TSNGN120412XE15-8			●	●	●	●
TSNGN120412XF15-8			●	●	●	●

### CBN Tip Single Edge



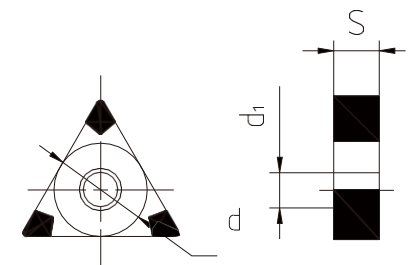
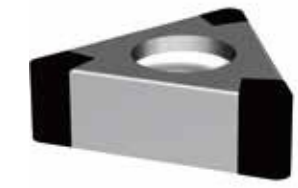
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
TCGW090204VD05-1	5.56	2.38	2.5	●	●	●	●
TCGW090204WD05-1				●	●	●	●
TCGW090208VD05-1	5.56	2.38	2.5	●	●	●	●
TCGW090208WD05-1				●	●	●	●
TCGW110204VD05-1	6.35	2.38	2.8	●	●	●	●
TCGW110204WD05-1				●	●	●	●
TCGW110208VD05-1	6.35	2.38	2.8	●	●	●	●
TCGW110208WD05-1				●	●	●	●

### CBN Tip Three Edge



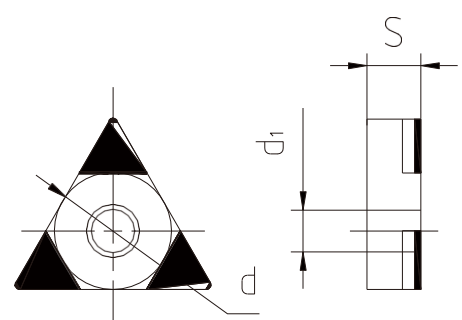
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
TCGW090204VD05-3	5.56	2.38	2.5				
TCGW090204WD05-3				●	●	●	●
TCGW090208VD05-3	5.56	2.38	2.5	●	●	●	●
TCGW090208WD05-3				●	●	●	●
TCGW110204VD05-3	6.35	2.38	2.8	●	●	●	●
TCGW110204WD05-3				●	●	●	●
TCGW110208VD05-3	6.35	2.38	2.8	●	●	●	●
TCGW110208WD05-3				●	●	●	●

### CBN Tip Six Edge



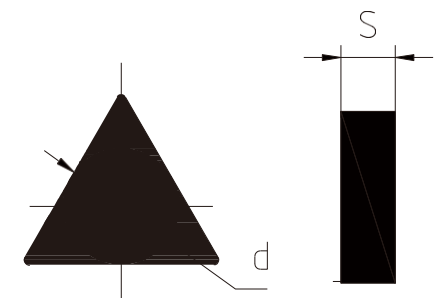
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
TNGA160404WE10-6	9.525	4.76	3.81	●	●	●	●
TNGA160404XE10-6				●	●	●	●
TNGA160408WE10-6	9.525	4.76	3.81	●	●	●	●
TNGA160408XE10-6				●	●	●	●
TNGA160412WE10-6	9.525	4.76	3.81	●	●	●	●
TNGA160412XE10-6				●	●	●	●

### CBN Tip Three Edge



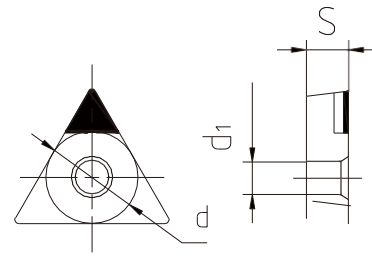
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
TNGA160404WE10-3	9.525	4.76	3.81	●	●	●	●
TNGA160404XE10-3				●	●	●	●
TNGA160408WE10-3	9.525	4.76	3.81	●	●	●	●
TNGA160408XE10-3				●	●	●	●
TNGA160412WE10-3	9.525	4.76	3.81	●	●	●	●
TNGA160412XE10-3				●	●	●	●

### CBN Full Top



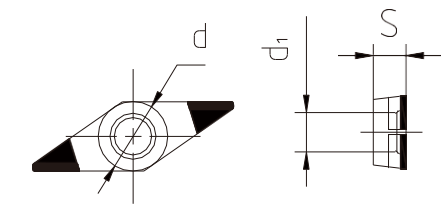
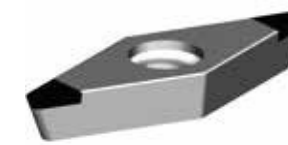
Model	Size		Material			
	d	S	GT96S	GT90	GT70	GT50
TTNGN110304WF10-6	6.35	3.18	●	●	●	●
TTNGN110304XE10-6			●	●	●	●
TTNGN110304XF10-6			●	●	●	●
TTNGN110308WF10-6	6.35	3.18	●	●	●	●
TTNGN110308XE10-6			●	●	●	●
TTNGN110308XF10-6			●	●	●	●
TTNGN110312WF10-6	6.35	3.18	●	●	●	●
TTNGN110312XE10-6			●	●	●	●
TTNGN110312XF10-6			●	●	●	●

### CBN Tip Single Edge



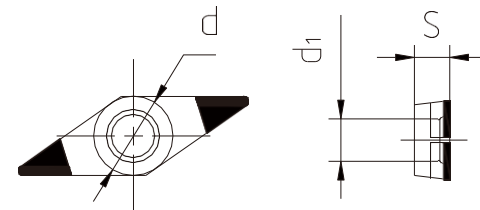
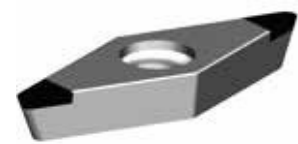
Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
TPGW090204VD05-1	5.56	2.38	2.5	●	●	●	●
TPGW090204WD05-1				●	●	●	●
TPGW090208VD05-1	5.56	2.38	2.5	●	●	●	●
TPGW090208WD05-1				●	●	●	●
TPGW110204VD05-1	6.35	2.38	2.8	●	●	●	●
TPGW110204WD05-1				●	●	●	●
TPGW110208VD05-1	6.35	2.38	2.8	●	●	●	●
TPGW110208WD05-1				●	●	●	●

### CBN Tip Double Edge



Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
VCGW110302VD05-2	6.35	3.18	2.8	●	●	●	●
VCGW110302WD05-2				●	●	●	●
VCGW110304VD05-2	6.35	3.18	2.8	●	●	●	●
VCGW110304WD05-2				●	●	●	●
VCGW160404VD05-2	9.525	4.76	4.4	●	●	●	●
VCGW160404WD05-2				●	●	●	●
VCGW160408VD05-2	9.525	4.76	4.4	●	●	●	●
VCGW160408WD05-2				●	●	●	●
VCGW160412VD05-2	9.525	4.76	4.4	●	●	●	●
VCGW160412WD05-2				●	●	●	●

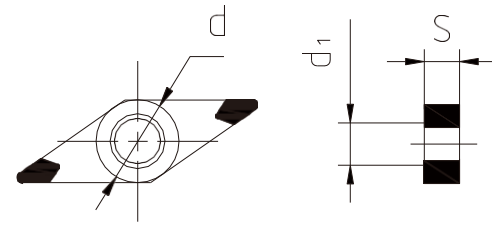
### CBN Tip Double Edge



Model	Size			Material			
	d	S	d <sub>1</sub>	GT96S	GT90	GT70	GT50
VBGW160404WE10-2	9.525	4.76	4.4	●	●	●	●
VBGW160404WF10-2				●	●	●	●
VBGW160408WE10-2	9.525	4.76	4.4	●	●	●	●
VBGW160408WF10-2				●	●	●	●
VBGW160412WE10-2	9.525	4.76	4.4	●	●	●	●
VBGW160412WF10-2				●	●	●	●

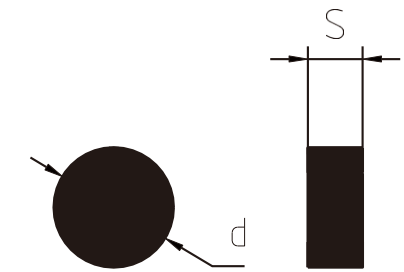


### CBN Tip and Four Edge



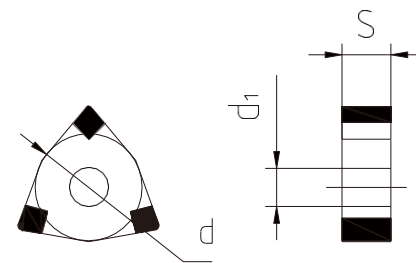
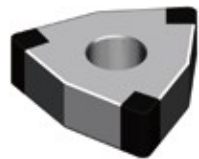
Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
VNGA160404XD05-4	9.525	4.76	3.81	●	●	●	●
VNGA160404XF05-4				●	●	●	●
VNGA160408XD05-4	9.525	4.76	3.81	●	●	●	●
VNGA160408XF05-4				●	●	●	●
VNGA160412XD05-4	9.525	4.76	3.81	●	●	●	●
VNGA160412XF05-4				●	●	●	●

### CBN Full Top



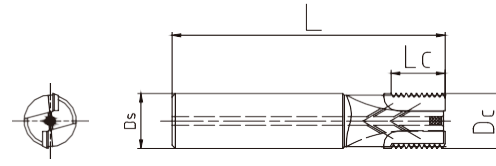
Model	Size		Material			
	d	S	GT96S	GT90	GT70	GT50
TRNGN060300WE10-1	6.35	3.18	●	●	●	●
TRNGN060300WE15-1			●	●	●	●
TRNGN060300XE10-1			●	●	●	●
TRNGN060300XE15-1			●	●	●	●
TRNGN090300WE10-1	9.525	3.18	●	●	●	●
TRNGN090300WE15-1			●	●	●	●
TRNGN090300XE10-1			●	●	●	●
TRNGN090300XE15-1			●	●	●	●
TRNGN120400WE10-1	12.7	4.76	●	●	●	●
TRNGN120400WE15-1			●	●	●	●
TRNGN120400XE10-1			●	●	●	●
TRNGN120400XE15-1			●	●	●	●

### CBN Tip Six Edge



Model	Size			Material			
	d	S	d <sub>i</sub>	GT96S	GT90	GT70	GT50
WNGA080404VD05-6	12.7	4.76	5.16	●	●	●	●
WNGA080404VE05-6				●	●	●	●
WNGA080408VD05-6	12.7	4.76	5.16	●	●	●	●
WNGA080408VE05-6				●	●	●	●
WNGA080412VD05-6	12.7	4.76	5.16	●	●	●	●
WNGA080412VE05-6				●	●	●	●

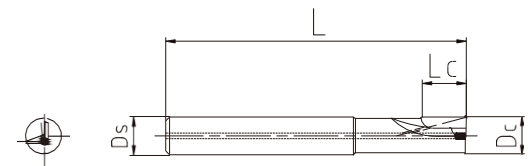
### PCD Thread Mill WMT Series



Model	Recommended Specification mm	Diameter D C	Long Blade L C	The Diameter of the Shank D S	Total Length L	The Number of Teeth	Knife Body Material	Order Number
WMTC0220306	M3×0.5	2.2	3	6	40	1	W.C	
WMTC0300406	M4×0.7	3	4	6	50	1	W.C	
WMTC0390506	M5×0.8	3.9	5	6	50	1	W.C	
WMTC0480506	M6×1	4.8	5	6	50	1	W.C	
WMTC0630806	M8×1.25	6.3	8	6	65	1	W.C	
WMTC0790808	M10×1.5	7.9	8	8	70	2	W.C	
WMTC0821008	M10×1.25	8.2	10	8	70	2	W.C	
WMTC0931010	M12×1.75	9.3	10	10	70	2	W.C	
WMTC0951010	M12×1.5	9.5	10	10	70	2	W.C	
WMTC1151212	M14×1.5	11.5	12	12	75	2	W.C	
WMTC1101212	M14×2	11	12	12	75	2	W.C	
WMTC1351414	M16×1.5	13.5	14	14	90	2	W.C	
WMTC1301414	M16×2	13	14	14	90	2	W.C	
WMTC1391414	M18×2.5	13.9	14	14	90	3	W.C	
WMTC1591616	M20×2.5	15.9	16	16	90	3	W.C	
WMTC1902020	M24×3	19	20	20	100	3	W.C	

Internal cold, different cutting edge lengths with different specification diameters, axis forward angle can choose negative value, positive value and zero front angle.

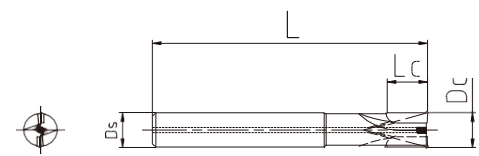
### PCD Straight-Slot Single-Edged End Mill WMS Series



Model	Diameter D C	Long Blade L C	The Diameter of the Shank D S	Total Length L	Maximum Depth	Knife Body Material	Order Number
WMSC0300406	3	4	6	50	3	W.C	
WMSC0400606	4	6	6	50	4	W.C	
WMSC0600806	6	8	6	50	6	W.C	
WMSC0801008	8	10	8	50	8	W.C	
WMSC1001210	10	12	10	60	10	W.C	

Internally cold, the tool is over the center, and the center cutting edge of this mill allows for insertion and finishing on a flat surface.

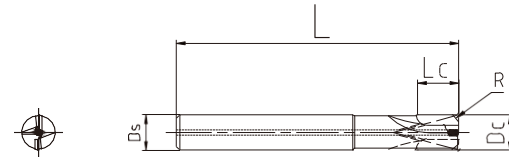
### PCD Straight-Slot Double-Edged End Mill WMD Series



Model	Diameter D C	Long Blade L C	The Diameter of the Shank D S	Total Length L	Tip C Corner	Knife Body Material	Order Number
WMDC0601506	6	15	6	80	0.1	W.C	
WMDC0801808	8	18	8	100	0.15	W.C	
WMDC1002010	10	20	10	100	0.2	W.C	
WMDC1202412	12	24	12	100	0.2	W.C	
WMDC1402614	14	26	14	120	0.2	W.C	
WMDC1602816	16	28	16	120	0.2	W.C	
WMDC1803018	18	30	18	120	0.2	W.C	
WMDC2003020	20	30	20	120	0.2	W.C	

Internally cold, the center cutting edge of this mill allows for insertion and finishing on a flat surface.

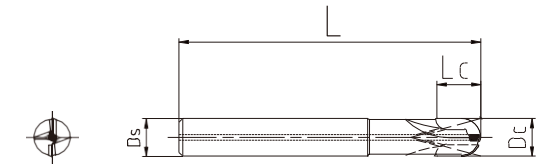
### PCD End Milling Cutters WMR Series



Model	Diameter D C	Long Blade L C	The Diameter of the Shank D S	The Slot is Long L 1	Circular Arc R	Total Length L	The Number of Edges Z	Knife Body Material	Order Number
WMRC0300606R10G	3	6	6	9	1	60	1	W.C.	
WMRC0400606R10G	4	6	6	9	1	60	1	W.C.	
WMRC0500806R10G	5	8	6	12	1	60	1	W.C.	
WMRC0601006R15G	6	10	6	14	1.5	75	2	W.C.	
WMRC0601506R15G	6	15	6	19	1.5	75	2	W.C.	
WMRC0801008R20G	8	10	8	15	2	75	2	W.C.	
WMRC0801508R20G	8	15	8	20	2	75	2	W.C.	
WMRC1001510R20G	10	15	10	20	2	75	2	W.C.	
WMRC1201512R20G	12	15	12	20	2	75	2	W.C.	
WMRC1602016R30G	16	20	16	25	3	100	2	W.C.	
WMRC1602016R30GS	16	20	16	25	3	100	2	Steel	
WMRC2002520R40G	20	25	20	30	4	100	2	W.C.	
WMRC2002520R40GS	20	25	20	30	4	100	2	Steel	

Internal cold, end face over the center, with different specification diameter cutting edge length, plane milling grooves and other occasions to use, the shaft forward angle can choose negative values, positive values and zero front angle.

### PCD Ball Head Mill WMSRD Series



Model	Diameter D c	Long Blade L c	The Diameter of the Shank D s	The Slot is Long L 1	Total Length L	The Number of Edges Z	Knife Body Material	Order Number
WMSRDC0300606G	3	6	6	9	60	1	W.C.	
WMSRDC0400606G	4	6	6	9	60	1	W.C.	
WMSRDC0500806G	5	8	6	12	60	2	W.C.	
WMSRDC0601006G	6	10	6	14	75	2	W.C.	
WMSRDC0601506G	6	15	6	19	75	2	W.C.	
WMSRDC0801008G	8	10	8	15	75	2	W.C.	
WMSRDC0801508G	8	15	8	20	75	2	W.C.	
WMSRDC0101510G	10	15	10	20	75	2	W.C.	
WMSRDC0121512G	12	15	12	20	75	2	W.C.	
WMSRDC0162016G	16	20	16	25	100	2	W.C.	
WMSRDC0162016GS	16	20	16	25	100	2	Steel	
WMSRDC0202520G	20	25	20	30	100	2	W.C.	
WMSRDC0202520GS	20	25	20	30	100	2	Steel	

Internal cold, different edge direction, offset cutting force to avoid layering defects, rigidity, smooth cutting, sharp edge and adequate wear resistance, suitable for composite materials.

### PCD Ball Head Mill WMSRT Series



Model	Diameter DC	Blade Length LC	Knife Handle Diameter DS	Slot Length L1	Total L	Blade Z	Knife Body Material	Order Number
WMSRTC0300603G	3	6	3	9	60	1	W.C.	
WMSRTC0400604G	4	6	4	9	60	1	W.C.	
WMSRTC0500805G	5	8	5	12	60	2	W.C.	
WMSRTC0601006G	6	10	6	14	75	2	W.C.	
WMSRTC0601506G	6	15	6	19	75	2	W.C.	
WMSRTC0801008G	8	10	8	15	75	2	W.C.	
WMSRTC0801508G	8	15	8	20	75	2	W.C.	
WMSRTC0101510G	10	15	10	20	75	2	W.C.	
WMSRTC0121512G	12	15	12	20	75	2	W.C.	
WMSRTC0162016G	16	20	16	25	100	2	W.C.	
WMSRTC0162016G	16	25	16	25	100	2	W.C.	
WMSRTC0202520G	20	25	20	30	100	2	W.C.	
WMSRTC0202520GS	20	30	20	35	100	2	Steel	

Internal cold, different edge direction, offset cutting force to avoid layering defects, rigidity, smooth cutting, sharp edge and adequate wear resistance, suitable for composite materials.

### PCD Multi-Edge End Mill WMM Series



Model	Diameter DC	Blade Length LC	Knife Handle Diameter DS	Slot Length L1	Total L	Blade Z	Knife Body Material	Order Number
WMMC0400604	4	6	4	19	50	3	W.C.	
WMMC0600606	6	6	6	18	60	3	W.C.	
WMMC0801108	8	11	8	13	61	3	W.C.	
WMMC0801008	8	10	8	19	75	3	W.C.	
WMMC0101310	10	13	10	15	63	3	W.C.	
WMMC0101310Z5	10	13	10	15	63	5	W.C.	
WMMC1201312	12	13	12	15	75	3	W.C.	
WMMC1201312Z5	12	13	12	15	75	5	W.C.	
WMMC1201312Z7	12	13	12	15	75	7	W.C.	
WMMC1201312Z9	12	13	12	15	75	9	W.C.	
WMMC1601616	16	16	16	19	79	3	W.C.	
WMMC1601616Z5	16	16	16	19	79	5	W.C.	
WMMC1601616Z7	16	16	16	19	79	7	W.C.	
WMMC1601616Z9	16	16	16	19	79	9	W.C.	

Internal cold, different edge direction, offset cutting force to avoid layering defects, rigidity, smooth cutting, sharp edge and adequate wear resistance, suitable for composite materials.

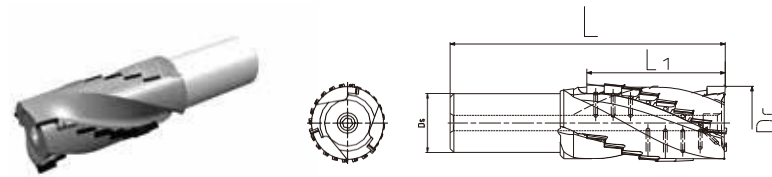
## PCD Corn Mill WMC series

Devise:

Mill diameter: 16, 0-25, 0MM Blades: 3

Knife holder type: H (DIN 6535) axis  
forward angle: positive

Cooling method: Internal cooling



Model	Diameter DC±0.05	Knife Holder Diameter DS h6	Total L	Chip Slot L1	Blade Length L2	Tip C Corner	Spiral Angle	Blade Z	Knife Body Material	Order Number
WMCC 1603016	16	16	100	50	30	0.2	15°	3	W . C	
WMCC 2003020	20	20	100	50	30	0.2	15°	3	W . C	
WMCC 2503025	25	25	110	50	30	0.2	15°	3	W . C	

This type of end mill is easy to achieve high cutting rates when cutting. Spiral-arranged cutting edges are best suited for large margin cutting, such as machining the entire zero. Machine machining power can be fully utilized when cutting large margins. Closed concave cavity, which can be cut by using this type of milling cutter. This series of end milling cutters has the advantages of long life and high performance.

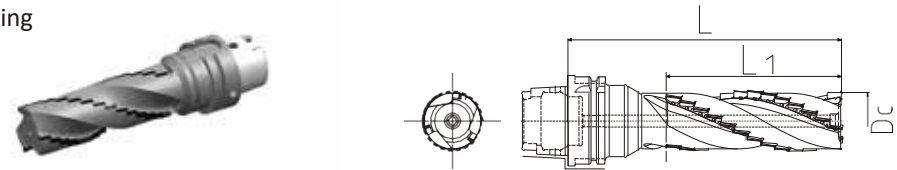
## PCD Corn Mill WMCH series

Devise:

Mill diameter: 32, 0-63, 0MM Blades: 3 or 4

Shank type: HSK-63 axis forward angle: positive

Cooling method: Internal cooling



Model	Diameter DC±0.05	Size L	Chip Slot L1	Blade Length L2	Tip C Corne r	Spiral Angle	Blade Z	Order Number
WMCHC32030	32,0	100	50	30	0.2	15°	3	
WMCHC40040	40,0	100	60	40	0.2	15°	3	
WMCHC50040	50,0	100	60	40	0.2	15°	4	
WMCHC63040	63,0	100	60	40	0.2	15°	4	

This type of end mill is easy to achieve high cutting rates when cutting. Spiral-arranged cutting edges are best suited for large margin cutting, such as machining the entire zero. Machine machining power can be fully utilized when cutting large margins. Closed concave cavity, which can be cut by using this type of milling cutter. This series of end milling cutters has the advantages of long life and high performance.

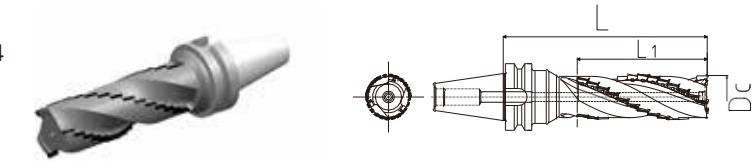
## PCD Corn Mill WMCB series

Devise:

Mill diameter: 32, 0-63, 0MM Blades: 3 or 4

Knife holder type: ISG40 (DIN 69871 D/G)

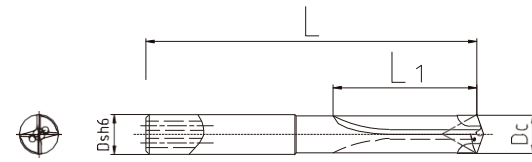
Axis forward angle: positive cooling mode:  
internal cooling



Model	Diamete r DC±0.05	Size L	Chip Slot L1	Blade length h L2	Tip C corn er	Spiral Angle	Blad e Z	Order Number
WMCBC32030	32,0	100	50	30	0.2	15°	3	
WMCBC40040	40,0	100	60	40	0.2	15°	3	
WMCBC50040	50,0	100	60	40	0.2	15°	4	
WMCBC63040	63,0	100	60	40	0.2	15°	4	

This type of end mill is easy to achieve high cutting rates when cutting. Spiral-arranged cutting edges are best suited for large margin cutting, such as machining the entire zero. Machine machining power can be fully utilized when cutting large margins. Closed concave cavity, which can be cut by using this type of milling cutter. This series of end milling cutters has the advantages of long life and high performance.

## PCD Straight Slot Drill WDS Series

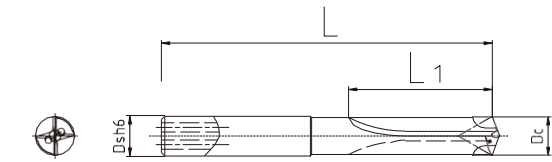


Model	diameter D <sub>c</sub>	Effective Drilling Depth	Slot length h L <sub>1</sub>	Handle Diameter D <sub>s</sub>	Total L	Order Number
WDSC0500605	5	35	44	6	82	
WDSC0510605	5.1	35	44	6	82	
WDSC0520605	5.2	35	44	6	82	
WDSC0530605	5.3	35	44	6	82	
WDSC0540605	5.4	35	44	6	82	
WDSC0550605	5.5	35	44	6	82	
WDSC0560605	5.6	35	44	6	82	
WDSC0570605	5.7	35	44	6	82	
WDSC0580605	5.8	35	44	6	82	
WDSC0590605	5.9	35	44	6	82	
WDSC0600605	6	35	44	6	82	
WDSC0610805	6.1	43	53	8	91	
WDSC0620805	6.2	43	53	8	91	
WDSC0630805	6.3	43	53	8	91	
WDSC0640805	6.4	43	53	8	91	
WDSC0650805	6.5	43	53	8	91	
WDSC0660805	6.6	43	53	8	91	
WDSC0670805	6.7	43	53	8	91	
WDSC0680805	6.8	43	53	8	91	
WDSC0690805	6.9	43	53	8	91	
WDSC0700805	7	43	53	8	91	
WDSC0710805	7.1	43	53	8	91	
WDSC0720805	7.2	43	53	8	91	
WDSC0730805	7.3	43	53	8	91	
W D S C 0740805	7.4	43	53	8	91	

120 degrees, 130 degrees, 140 degrees the top angle of the main blade; Internal cold, chip slot polishing, to avoid blocking debris;

4 edge belt design can obtain IT9 tolerance and good surface quality; Mainly used in aluminum alloys, copper alloys and other non-ferrous metals.

## PCD Straight Slot Drill WDS Series

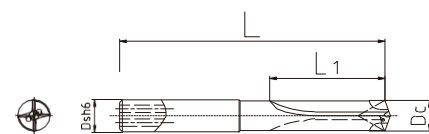


Model	Diameter D <sub>c</sub>	Effective Drilling Depth	Slot Length h L <sub>1</sub>	Handle Diameter D <sub>s</sub>	Total L	Order Number
WDSC0750805	7.5	43	53	8	91	
WDSC0760805	7.6	43	53	8	91	
WDSC0770805	7.7	43	53	8	91	
WDSC0780805	7.8	43	53	8	91	
WDSC0790805	7.9	43	53	8	91	
WDSC0800805	8	43	53	8	91	
WDSC0811005	8.1	49	61	10	103	
WDSC0821005	8.2	49	61	10	103	
WDSC0831005	8.3	49	61	10	103	
WDSC0841005	8.4	49	61	10	103	
WDSC0851005	8.5	49	61	10	103	
WDSC0861005	8.6	49	61	10	103	
WDSC0871005	8.7	49	61	10	103	
WDSC0881005	8.8	49	61	10	103	
WDSC0891005	8.9	49	61	10	103	
WDSC0901005	9	49	61	10	103	
WDSC0911005	9.1	49	61	10	103	
WDSC0921005	9.2	49	61	10	103	
WDSC0931005	9.3	49	61	10	103	
WDSC0941005	9.4	49	61	10	103	
WDSC0951005	9.5	49	61	10	103	
WDSC0961005	9.6	49	61	10	103	
WDSC0971005	9.7	49	61	10	103	
WDSC0981005	9.8	49	61	10	103	
WDSC0991005	9.9	49	61	10	103	

120 degrees, 130 degrees, 140 degrees the top angle of the main blade;

4-edge belt design can obtain IT9 tolerance and good surface quality;

### PCD Straight Slot Drill WDS Series

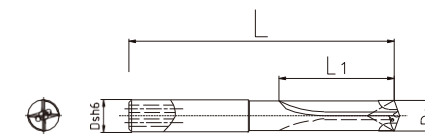


Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDSC1001005	10	49	61	10	103	
WDSC1011205	10.1	56	71	12	118	
WDSC1021205	10.2	56	71	12	118	
WDSC1031205	10.3	56	71	12	118	
WDSC1041205	10.4	56	71	12	118	
WDSC1051205	10.5	56	71	12	118	
WDSC1061205	10.6	56	71	12	118	
WDSC1071205	10.7	56	71	12	118	
WDSC1081205	10.8	56	71	12	118	
WDSC1091205	10.9	56	71	12	118	
WDSC1101205	11	56	71	12	118	
WDSC1111205	11.1	56	71	12	118	
WDSC1121205	11.2	56	71	12	118	
WDSC1131205	11.3	56	71	12	118	
WDSC1141205	11.4	56	71	12	118	
WDSC1151205	11.5	56	71	12	118	
WDSC1161205	11.6	56	71	12	118	
WDSC1171205	11.7	56	71	12	118	
WDSC1181205	11.8	56	71	12	118	
WDSC1191205	11.9	56	71	12	118	
WDSC1201205	12	56	71	12	118	
WDSC1251405	12.5	60	77	14	124	
WDSC1301405	13	60	77	14	124	
WDSC1351405	13.5	60	77	14	124	
WDSC1401405	14	60	77	14	124	

120 degrees, 130 degrees, 140 degrees the top angle of the main blade;

4-edge belt design can obtain IT9 tolerance and good surface quality;

### PCD Straight Slot Drill WDS Series

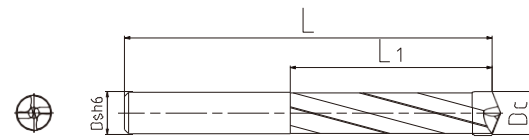


Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDSC1451605	14.5	63	83	16	133	
WDSC1501605	15	63	83	16	133	
WDSC1551605	15.5	63	83	16	133	
WDSC1601605	16	63	83	16	133	
WDSC1651805	16.5	71	93	18	143	
WDSC1701805	17	71	93	18	143	
WDSC1751805	17.5	71	93	18	143	
WDSC1801805	18	71	93	18	143	
WDSC1852005	18.5	77	101	20	153	
WDSC1902005	19	77	101	20	153	
WDSC1952005	19.5	77	101	20	153	
WDSC2002005	20	77	101	20	153	

120 degrees, 130 degrees, 140 degrees the top angle of the main blade;

4-edge belt design can obtain IT9 tolerance and good surface quality;

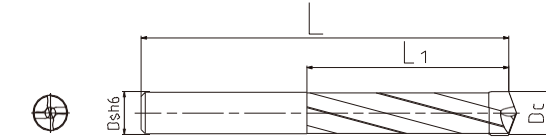
### PCD Spiral Diamond WDH Series



Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDHV0500605	5	35	44	6	82	
WDHV0510605	5.1	35	44	6	82	
WDHV0520605	5.2	35	44	6	82	
WDHV0530605	5.3	35	44	6	82	
WDHV0540605	5.4	35	44	6	82	
WDHV0550605	5.5	35	44	6	82	
WDHV0560605	5.6	35	44	6	82	
WDHV0570605	5.7	35	44	6	82	
WDHV0580605	5.8	35	44	6	82	
WDHV0590605	5.9	35	44	6	82	
WDHV0600605	6	35	44	6	82	
WDHV0610805	6.1	43	53	8	91	
WDHV0620805	6.2	43	53	8	91	
WDHV0630805	6.3	43	53	8	91	
WDHV0640805	6.4	43	53	8	91	
WDHV0650805	6.5	43	53	8	91	
WDHV0660805	6.6	43	53	8	91	
WDHV0670805	6.7	43	53	8	91	
WDHV0680805	6.8	43	53	8	91	
WDHV0690805	6.9	43	53	8	91	
WDHV0700805	7	43	53	8	91	
WDHV0710805	7.1	43	53	8	91	
WDHV0720805	7.2	43	53	8	91	
WDHV0730805	7.3	43	53	8	91	
WDHV0740805	7.4	43	53	8	91	

135 degrees, 140 degrees, 150 degrees the top angle of the main blade;  
For ceramics, composites and other processing.

### PCD Spiral Diamond WDH Series

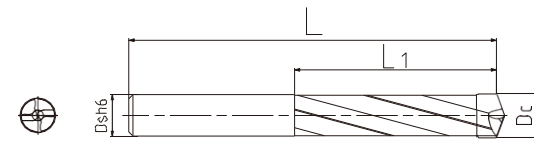


Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDHV0750805	7.5	43	53	8	91	
WDHV0760805	7.6	43	53	8	91	
WDHV0770805	7.7	43	53	8	91	
WDHV0780805	7.8	43	53	8	91	
WDHV0790805	7.9	43	53	8	91	
WDHV0800805	8	43	53	8	91	
WDHV0811005	8.1	49	61	10	103	
WDHV0821005	8.2	49	61	10	103	
WDHV0831005	8.3	49	61	10	103	
WDHV0841005	8.4	49	61	10	103	
WDHV0851005	8.5	49	61	10	103	
WDHV0861005	8.6	49	61	10	103	
WDHV0871005	8.7	49	61	10	103	
WDHV0881005	8.8	49	61	10	103	
WDHV0891005	8.9	49	61	10	103	
WDHV0901005	9	49	61	10	103	
WDHV0911005	9.1	49	61	10	103	
WDHV0921005	9.2	49	61	10	103	
WDHV0931005	9.3	49	61	10	103	
WDHV0941005	9.4	49	61	10	103	
WDHV0951005	9.5	49	61	10	103	
WDHV0961005	9.6	49	61	10	103	
WDHV0971005	9.7	49	61	10	103	
WDHV0981005	9.8	49	61	10	103	
WDHV0991005	9.9	49	61	10	103	

135 degrees, 140 degrees, 150 degrees the top angle of the main blade;  
For ceramics, composites and other processing.



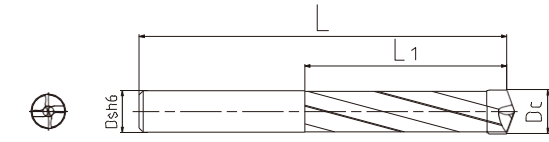
## PCD Spiral Diamond WDH Series



Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDHV1001005	10	49	61	10	103	
WDHV1011205	10.1	56	71	12	118	
WDHV1021205	10.2	56	71	12	118	
WDHV1031205	10.3	56	71	12	118	
WDHV1041205	10.4	56	71	12	118	
WDHV1051205	10.5	56	71	12	118	
WDHV1061205	10.6	56	71	12	118	
WDHV1071205	10.7	56	71	12	118	
WDHV1081205	10.8	56	71	12	118	
WDHV1091205	10.9	56	71	12	118	
WDHV1101205	11	56	71	12	118	
WDHV1111205	11.1	56	71	12	118	
WDHV1121205	11.2	56	71	12	118	
WDHV1131205	11.3	56	71	12	118	
WDHV1141205	11.4	56	71	12	118	
WDHV1151205	11.5	56	71	12	118	
WDHV1161205	11.6	56	71	12	118	
WDHV1171205	11.7	56	71	12	118	
WDHV1181205	11.8	56	71	12	118	
WDHV1191205	11.9	56	71	12	118	
WDHV1201205	12	56	71	12	118	
WDHV1251405	12.5	60	77	14	124	
WDHV1301405	13	60	77	14	124	
WDHV1351405	13.5	60	77	14	124	
WDHV1401405	14	60	77	14	124	

135 degrees, 140 degrees, 150 degrees the top angle of the main blade;  
For ceramics, composites and other processing.

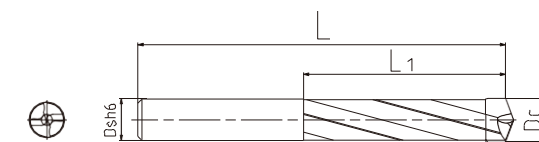
## PCD Spiral Diamond WDH Series



Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
WDHV1451605	14.5	63	83	16	133	
WDHV1501605	15	63	83	16	133	
WDHV1551605	15.5	63	83	16	133	
WDHV1601605	16	63	83	16	133	
WDHV1651805	16.5	71	93	18	143	
WDHV1701805	17	71	93	18	143	
WDHV1751805	17.5	71	93	18	143	
WDHV1801805	18	71	93	18	143	
WDHV1852005	18.5	77	101	20	153	
WDHV1902005	19	77	101	20	153	
WDHV1952005	19.5	77	101	20	153	
WDHV2002005	20	77	101	20	153	

135 degrees, 140 degrees, 150 degrees the top angle of the main blade;  
For ceramics, composites and other processing.

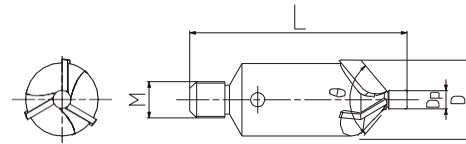
## Tiny Welding Drill Bits SWDH Series



Model	Diameter DC	Effective Drilling Depth	Slot Length L1	Handle Diameter Ds	Total L	Order Number
SWDH0080440	0.8	2.4	3.6	4	40	
SWDH0100440	1.0	3.0	4.5	4	40	
SWDH0120440	1.2	3.6	5.4	4	40	
SWDH0140440	1.4	4.2	6.3	4	40	
SWDH0160440	1.6	4.8	7.2	4	40	
SWDH0180440	1.8	5.4	8.1	4	40	
SWDH0200440	2.0	6.0	9.0	4	40	

The whole for polycrystalline drill bit, more wear-resistant;  
For ceramics, glass, silicon carbide, monocrystalline silicon, aluminum alloys, carbon fiber composites and other processing.

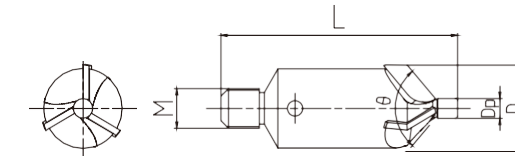
### PCD Nest Drilling ACT Series



Model	Guide Column Diameter Dp	Tool Diameter D	Angle	Connect Thread M	Blade Z	Order Number
ACTCG0250A10	2.5	10	100°	M6×1.0	2\3	
ACTCG0300A10	3	10	100°	M6×1.0	2\3	
ACTCG0300B10	3	12	100°	M6×1.0	2\3	
ACTCG0300C10	3	14	100°	M8×1.0	2\3	
ACTCG0400A10	4	17	100°	M8×1.0	2\3	
ACTCG0600A10	6	19	100°	M8×1.0	2\3	
ACTCG0800A10	8	22	100°	M8×1.0	2\3	
ACTCG0800B10	8	25	100°	M8×1.0	2\3	

Nest drilling in adjustable. Nest set deep set;  
 PCD's ultra- high hardness and processing. The sharp life of the blade is long. The surface roughness is maintained optimally; the exact size. To ensure the concentricity of the nest;  
 Precision grade 6H thread and tapered cooperation to ensure high precision quickly and easily replace the drill bit;  
 Mainly used in CFRP, GFRP, titanium alloy and ceramic materials.

### PCD Nest Drilling ACT Series



Model	Guide Column Diameter Dp	Tool Diameter D	Angle	Connect Thread M	Blade Z	Order Number
ACTCG0250A13	2.5	10	130°	M6×1.0	2\3	
ACTCG0300A13	3	10	130°	M6×1.0	2\3	
ACTCG0300B13	3	12	130°	M6×1.0	2\3	
ACTCG0300C13	3	14	130°	M8×1.0	2\3	
ACTCG0400A13	4	17	130°	M8×1.0	2\3	
ACTCG0600A13	6	19	130°	M8×1.0	2\3	
ACTCG0800A13	8	22	30°	M8×1.0	2\3	
ACTCG0800B13	8	25	130°	M8×1.0	2\3	

Nest drill is equipped with adjustable nest set deep set; PCD's ultra- high hardness and processing method. The sharp life of the blade is long. The surface roughness is maintained to the best; the precise size guarantees the concentricity of the nest;  
 Precision grade 6H thread and tapered cooperation to ensure high precision quickly and easily replace the drill bit;  
 Mainly used in CFRP, GFRP, titanium alloy and ceramic materials.

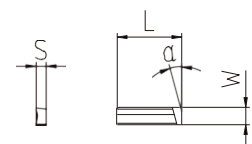
### Standard Guide Bar Reamer CRT Series



Model	Diameter DC	Blade Length L2	Guide Long L1	Maximum Depth Dp	The Handle is Long	Total L	Handle Diameter DS	Blades are Available
CRT15.000-16135-16	15	16	30	85	45	135	16	AP 16
CRT16.000-16155-16	16	16	30	100	50	155	16	AP 16
CRT17.000-20155-16	17	16	30	100	50	155	20	AP 16
CRT18.000-20155-17	18	17	30	100	50	155	20	AP 17
CRT19.000-20155-17	19	17	30	100	50	155	20	AP 17
CRT20.000-20165-17	20	17	30	110	56	165	20	AP 17
CRT21.000-25165-17	21	17	30	110	56	165	25	AP 17
CRT22.000-25165-17	22	17	30	110	56	165	25	AP 17
CRT23.000-25165-17	23	17	30	110	56	165	25	AP 17
CRT24.000-25165-17	24	17	30	110	56	165	25	AP 17
CRT25.000-25165-17	25	17	30	110	56	165	25	AP 17
CRT26.000-25165-17	26	17	30	110	56	165	25	AP 17
CRT27.000-25165-17	27	17	30	110	56	165	25	AP 17
CRT28.000-32165-22	28	22	30	110	56	165	32	AP 22
CRT29.000-32165-22	29	22	30	110	56	165	32	AP 22
CRT30.000-32165-22	30	22	30	110	56	165	32	AP 22
CRT31.000-32165-22	31	22	30	110	56	165	32	AP 22

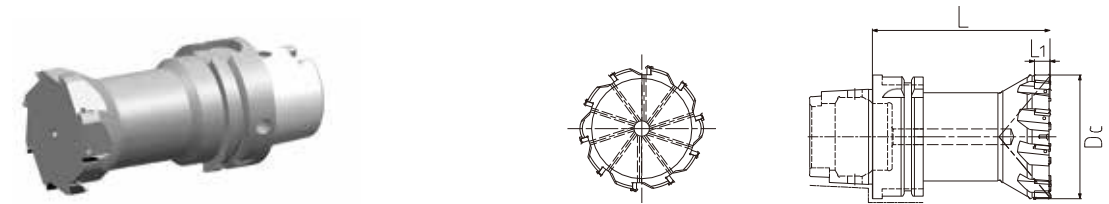
Internal cooling, IT6-grade hole processing, high cylindrical hole finishing.

### Standard Guide Strip Reamer Blade



Model	Size		
	L	W	S
AP163515	16	3.5	1.5
AP174520	17	4.5	2.0
AP226530	22	6.5	3.0

### PCD Welded Milling Cutters WME Series

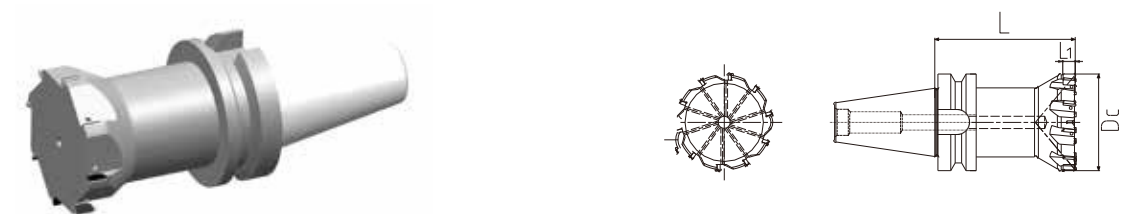


PCD welded face mill

This product type is particularly used for machining large margin face milling, cutting depth of up to 10mm, in addition to the number of teeth can achieve a very high feed speed, which is the use of low spindle speed machine tool a special advantage;

Vibrations that occur during machining (which is also caused by parts) are absorbed by a strong knife body and are not passed on to the machining surface.

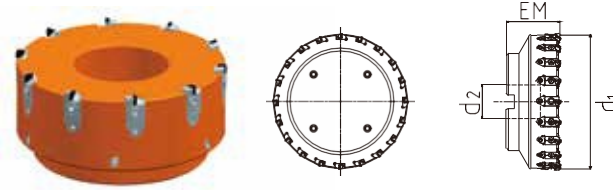
Model	Mill Diameter D1(JS8)	Number of Blades Z(±)	Size A 0.02)	Knife Holder Type	Chip Slot L2	Blade Length L3	Tip C Corner r	The Forward Corner of the Axis	Weight KG	Order Number
WMEHC0401010	40	10	100	HSK-A 6 3	20	10	0.14	4°	1.43	
WMEHC0501210	50	12	100	HSK-A 6 3	20	10	0.14	4°	1.71	
WMEHC0631410	63	14	100	HSK-A 6 3	20	10	0.14	4°	1.98	
WMEHC0801610	80	16	100	HSK-A 6 3	20	10	0.14	4°	2.39	
WMEHC1001810	100	18	100	HSK-A 6 3	20	10	0.14	4°	3.01	
WMEHC1252210	125	20	100	HSK-A 6 3	20	10	0.14	4°	4.21	



Model	Mill Diameter D1(js8)	Number of Blades Z(±)	Size A 0.02)	Knife Holder Type	Chip Slot L2	Blade Length L3	The Forward Corner of the Axis	Weight kg	Order Number
WMEBC0401010	40	10	100	BT 40	20	10	4°	1.63	
WMEBC0501210	50	12	100	BT 40	20	10	4°	1.96	
WMEBC0631410	63	14	100	BT 40	20	10	4°	2.17	

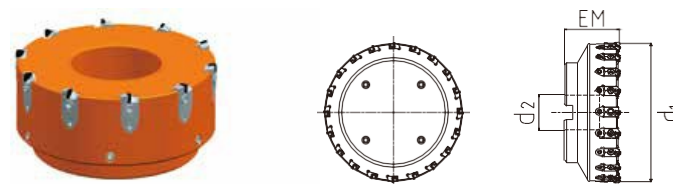
### Clamp Milling Cutter late CMR Series (Thick)

Devise:  
Mill diameter: 63-400MM Blades: 8-30 (standard)  
Cooling method: Internal cooling



Model	Milling Cutter d1 Straight	Blade Number Z	Mounting Size EM (±0.0 5)	Knife Holder Diameter d2	Knife Material	Spindle Speed (rpm)	Includes the Weight kg of the Milling Knife Clip	Order Number
CMR0630822	63	8	48	22	steel	25.000	0.8	
CMR0800827	80	8	50	27	aluminum	20.000	0.75	
CMR1001031	100	10	50	32	aluminum	18.000	1.2	
CMR1251340	125	13	63	40	aluminum	16.000	2.2	
CMR1601840	160	18	63	40	aluminum	13.000	2.15	
CMR1802040	180	20	63	40	aluminum	11.500	2.6	
CMR2002460	200	24	63	60	aluminum	10.000	4.4	
CMR2503060	250	30	63	60	aluminum	8.000	7	

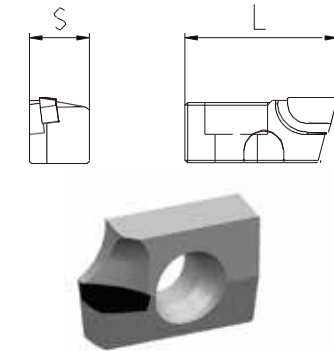
### Clamp Milling Cutter Plate CMF Series (Fine)



Model	Milling Cutter d1 Straight	Blade Number Z	Mounting Size EM (±0.0 5)	Knife Holder Diameter d2	Knife Material	Spindle Speed (rpm)	Includes the Weight kg of the Milling Knife Clip	Order Number
CMF0630822	63	8	48	22	steel	25.000	0.8	
CMF0800827	80	8	50	27	aluminum	20.000	0.75	
CMF1001032	100	10	50	32	aluminum	18.000	1.2	
CMF1251340	125	13	63	40	aluminum	16.000	2.2	
CMF1601840	160	18	63	40	aluminum	13.000	2.15	
CMF1802040	180	20	63	40	aluminum	11.500	2.6	
CMF2002460	200	24	63	60	aluminum	10.000	4.4	
CMF2503060	250	30	63	60	aluminum	8.000	7	

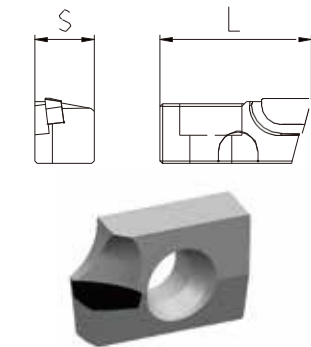
### Milling Knife Clip CMUC Series

Model	Size		Material		
	L	S	SFC025	SFC010	SFC302
CMUC1812	18.5	12	●	●	●
CMUC3012	30	12	●	●	●



### Milling Knife Clip CMUB Series

Model	Size		Material			
	L	S	SFB960	SFB900	SFB720	SFB500
CMUB1812	18.5	12	●	●	●	●
CMUB3012	30	12	●	●	●	●



Blade Geometry Parameters		The Corner 0.1×45°	R0.2	Round R0.4	R0.6	The Surface Quality RZ ≤ 10m RZ > 10m	
The Corner	C	1	—	—	—	2	3
Invert the Circle	R	—	2	4	6	2	3

Size unit mm  
Special size ordering is supported.

## Clamped Face Mill (Coarse)

Accessories and spare parts for the face milling cutter

Name	PowerSpeed	Milling Plate Diameter d1	Size	Order Number
Coolant screws	.	63		
Coolant screws	.	80		
Coolant screws	.	100		
Coolant screws	.	125		
Coolant lid	.	160 and 180		
Coolant lid	.	200		
Secure the screws	.	160 to 250	M 6 × 2 0	
nut	.	1)	M 6 × 8	
Adjust the gasket	.	63 to 250	0.25	
Adjust the gasket	.	63 to 250	0.5	
Adjust the gasket	.	63 to 250	1	
Adjust the gasket	.	63 to 250	1.5	
Adjust the gasket	.	63 to 250	2	
Balance the screws	.	80 to 160	M 6 × 1 0	
Balance the screws	.	200 to 250	M 10 × 1 0	
Balance the screws	.	2)	M 8 × 1 0	
Mill clip	.			
Secure the screws	.	63 to 250	M 6 × 1 2	
Adjust the screws	.	63 to 250	M 5 × 8	
Lock the screws	.	63到 250	M 6 × 1 2	

## Clamped Face Mill (Coarse)

Accessories and spare parts for the face milling cutter

Name	PowerSpeed	Milling Plate Diameter d1	size	Order Number
Chip shield				
Fine chip shield (right-handed)	.	63 to 250		
Fine chip shield (left-handed)	.	63 to 250		
TORX screws	.	63 to 250	M3×7	
Milling rod				
Secure the screws	.	160	M12×40	
Secure the screws	.	200 to 250	M16×50	
Fixing screw 4)	.	315 to 500	M20×55	
T-Wrench	.		T05	
T-Wrench	.		T06	
T-Wrench	.		T08	
T-Wrench	.		T15	
T-Wrench	.		T20	

### Recommended Processing Parameters

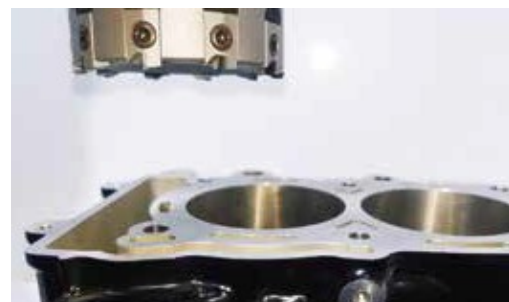
Material	Cutting Speed Vc (m/min)	Feed Per Tooth fz (mm)	Cutting Depth mm
4% ≤ aluminum SI	500-5000	0.05-0.2	0.1-5.0
Aluminum 4% < SI ≤ 8%	500-4000	0.05-0.2	0.1-5.0
Aluminum 8% < SI ≤ 13%	400-3800	0.05-0.2	0.1-5.0
13% > aluminum SI	250-3000	0.03-0.15	0.1-3.0
Magnesium alloy	300-6000	0.05-0.3	0.1-4.0
Copper alloy	300-6000	0.05-0.4	0.1-3.0
Brass alloy	300-5000	0.05-0.25	0.1-4.0
graphite	250-2500	0.05-0.2	0.1-3.0
GFRP、CFRP	250-4000	0.08-1.0	0.1-5.0



# Application of the Automotive Industry

## Block

As the substrate and "skeleton" of the engine, it is necessary to withstand the high temperature and high-pressure gas force of combustion chamber operation, and the best finishing tools must be used to meet the extremely high process requirements required for its machining, and we have a great deal of design and application experience in this area.



## Motor Shell

The center hole and shaft of the motor shell must be assembled with very high precision and fit conditions, thus extending the service life of the electric machine, the coaxial degree of the hole system to meet the requirements in order to effectively eliminate the noise of motor operation. We take this into account in our timing to provide you with an efficient process solution.





### Steering

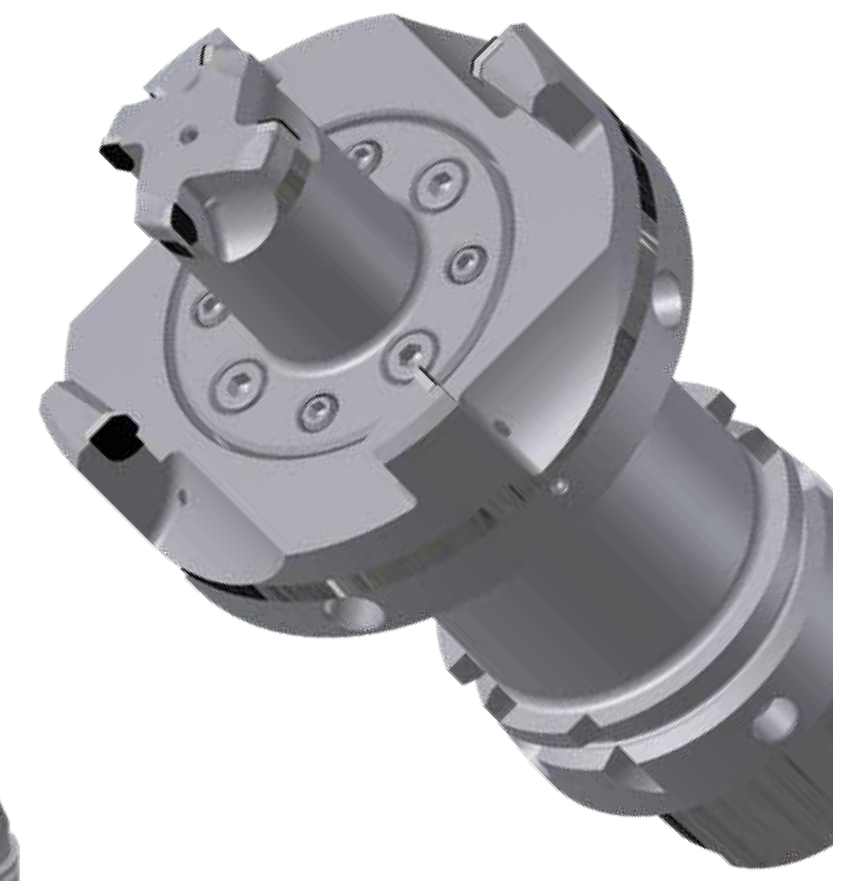
Mainly on the rack and input shaft to play a fixed and protective role, limiting the rack

Travel, the inner force characteristics of the housing can make full use of the strength of the material with greater carrying capacity.



### Cylinder head

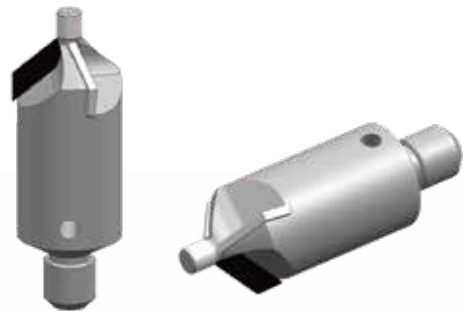
The engine head is mounted on top of the cylinder block, sealing the cylinder from the upper part and forming a combustion chamber, usually made of aluminum alloy, grey cast iron or cast iron. As the upper part of the cylinder, it is often in contact with high temperature and high-pressure gas, which requires a large thermal load and mechanical load, which we all consider in our design.



PCD high-precision non-standard tool overall solution

## Aerospace Applications

Composite materials with strong design, good anti-fatigue fracture performance, structural functional integration and other superior properties, for aerospace lightweight design of the first material.  
PCD ultra-hard tools with high wear resistance, high life, good finish and so on, Quartet as China's leading composite ultra-hard material research and development and production base, for PCD tool processing to provide a full range of technical support.

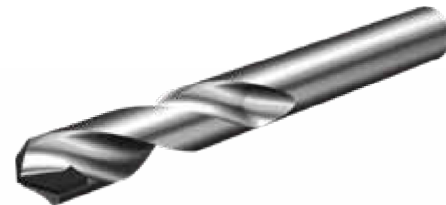


### Nest Drill

Metric standard full specifications for hole angles such as 100 x /130 x.

Processed material:  
T700 composites

Product benefits:  
PCD edge durability is high, surface roughness index maintenance is good,  
High thread accuracy, can quickly replace the drill bit, guide column wear resistance is better than imported products. General guide column diameter range: s 2.5 to s8 Accept special guide columns Specifications for diameter and special hole angle.



### Sintered PCD Hemp Drill

Processed material:  
T700 composites

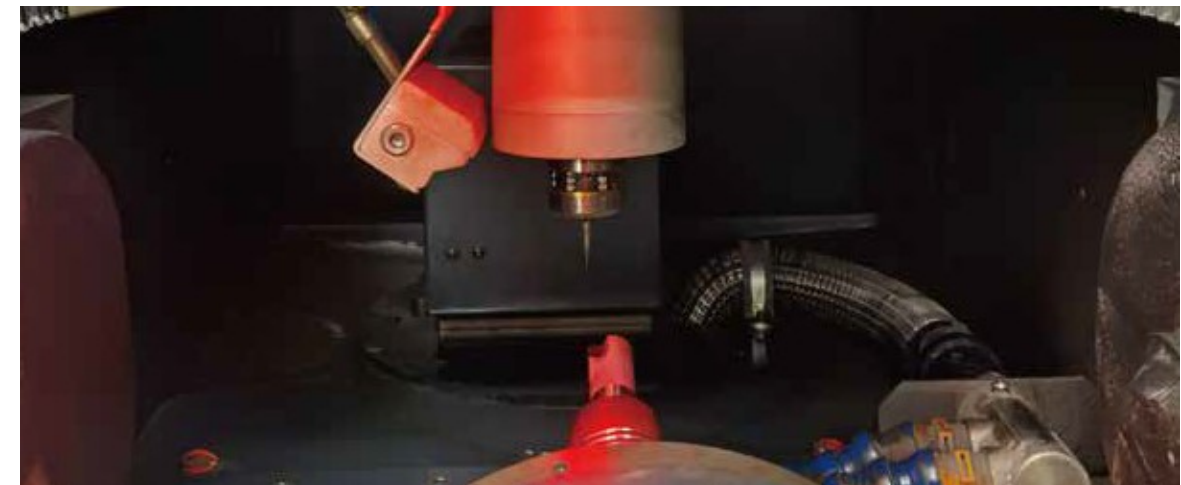
Product benefits:  
The overall PCD drill tip structure, very sharp edge, can be effective  
Inhibits material stratification and burrs, resulting in significantly increased durability. General diameter model: 2 to 20 to accept special diameter specifications customized.



PCD high-precision non-standard tool overall solution

## 3C Electronics

The machining process of 3C products changes with the change of material, which requires cutting tools to innovate to meet the needs of new materials and new industries. As a high-tech enterprises, Four-Party has always regarded technological innovation as the first driving force of enterprise development, after years of inheritance and accumulation, Four-Way Da tool products with strong wear resistance, high finish, long life characteristics, efficient and rapid solution to the cutting problems you encounter in the production process.



Blade details are on display



Customer orientation

Be honest and trustworthy

Be realistic and innovative

Win-win cooperation

## Other classes of non-standard composite machining tools





### PCD standard inserts

Single-edged PCD tip



Full-face PCD tips



Multi-edged PCD tips



Full edge PCD blade



Tip Display CBN standard Insert

CBN welding tips

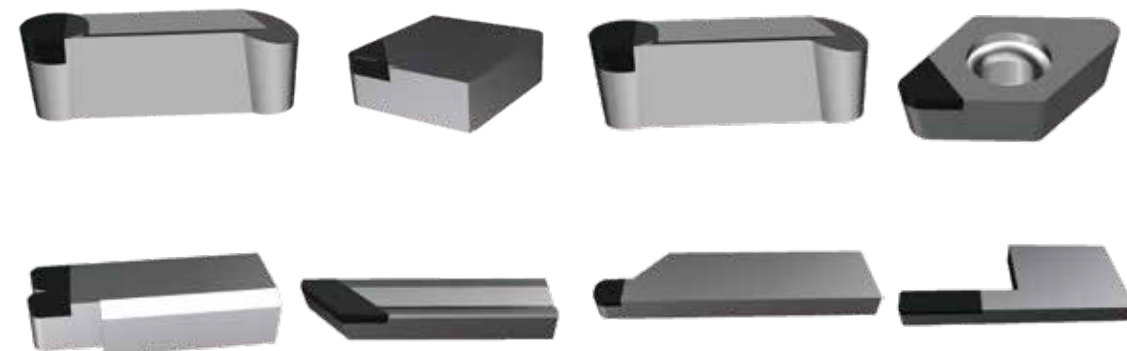


CBN solid inserts



### Non-standard blades

Non-standard PCD hub knife



## User Guide

Quartet focuses on independent research and development and technological innovation, with many years of experience in material research and development and the advantages of the entire industry chain, and actively to the field of tools

extend. Through years of development and accumulation, now has the core process of tools and rich application experience, to provide customers with mature standards and

Non-standard tool customization services for the industry's production and process to provide strong support.



## Products and Services

In the face of increasingly new production patterns and workpiece materials, tools have become an important process factor in optimizing production and machining technology while in production. The precision, cutting speed and machining life of the tool in the process play a decisive role in production efficiency. We offer you one-on-one skills

technical services, the initial project's program design, product production to the end of the actual application of the full tracking, efficient and rapid solution to customers in Cutting problems encountered in production.

### The design of the scheme



When we undertake the project plan, according to the project characteristics and customer needs, organize the project technical discussion and reduce the cost-effectiveness as the principle, combined with the latest processing process, as far as possible to optimize the project, to provide customers with the best program configuration.



### Run-debug



Quadruda offers a wide range of general purpose or custom-built upgraded blades, including PCD and CBN blades, for standard, non-standard machine clamping tools, making it more efficient for customers to use organic clamping tools.



### Provide sample knife trial service



For each new project, we develop the best design solutions and provide sample knife trial services from the essential needs of our customers.



### LEADING DESIGN

Design Leadership

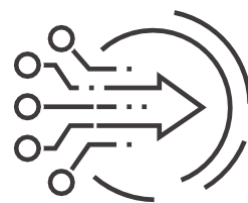
Broadspectting, tracking the international advanced tool design concept, beyond innovation.



### HIGH QUALITY

High-Quality

Lean production management, high-precision cutting-edge equipment, advanced materials directional research and development.



### RAPID RESPONSE

The Response Was Quick

Production delivery is lean and fast, and problem solving response is timely.



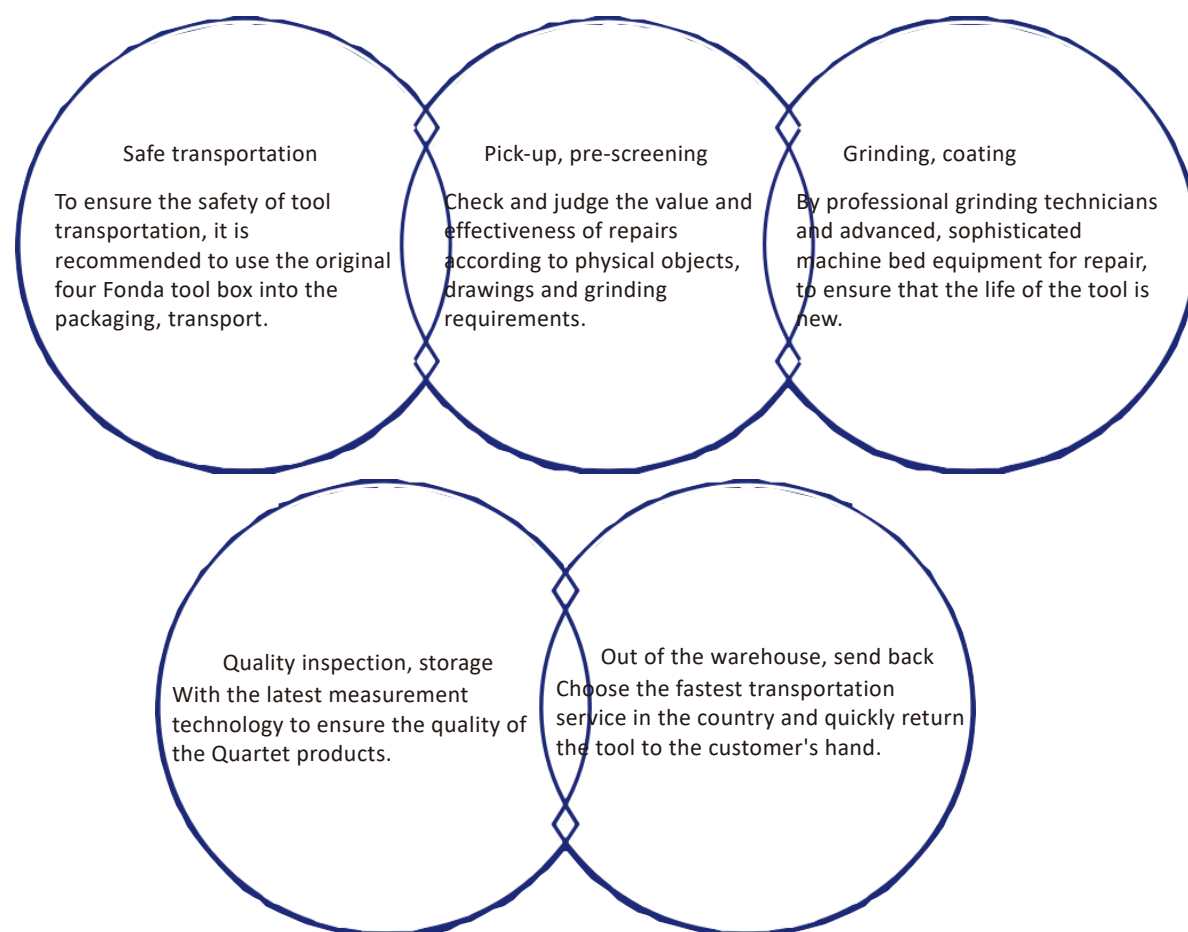
## Problems and Countermeasures Turning

### Technical guidance on tool damage patterns and tool life

Insert tip Damage Pattern	Cause	Countermeasure
The rear face is worn	<ul style="list-style-type: none"> <li>·The tool material is not wear-resistant enough</li> <li>·The cutting speed is fast</li> <li>·The feed is very low</li> </ul>	<ul style="list-style-type: none"> <li>·Change to a material with higher wear resistance</li> <li>·Increase the front corner</li> <li>·Reduce cutting speed</li> <li>·Increase the feed</li> </ul>
Crescent depression wear	<ul style="list-style-type: none"> <li>·The tool material is not resistant to crescent depression wear</li> <li>·The front corner is too small</li> <li>·The cutting speed is fast</li> <li>·The feed and cut depth are large</li> </ul>	<ul style="list-style-type: none"> <li>·Changed to a material that is more resistant to crescent abrasiveness</li> <li>·Increase the front corner</li> <li>·Change the blade chip slot</li> <li>·Reduce cutting speed</li> <li>·Reduce feed and depth of cut</li> </ul>
Cut the edge of the small tip	<ul style="list-style-type: none"> <li>·The tool material is not tough enough</li> <li>·The adhesion of the chips causes the cutting edge to fall off</li> <li>·The cutting edge strength is insufficient</li> <li>·The feed and cut depth are large</li> </ul>	<ul style="list-style-type: none"> <li>·Change to a more resilient material</li> <li>·Increases the amount of rounding of the cutting edge</li> <li>·Reduce the front corner</li> <li>·Reduce feed and depth of cut</li> </ul>
Cut edge	<ul style="list-style-type: none"> <li>·The tool material is not tough enough</li> <li>·The cutting edge strength is insufficient</li> <li>·The knife rod is not strong enough</li> <li>·The feed and depth of cut are too large</li> </ul>	<ul style="list-style-type: none"> <li>·Change to a more resilient material</li> <li>·Select a blade chip-cutting groove with high cutting edge strength</li> <li>·Select the lever with a large cross cutting angle</li> <li>·Select a large knife rod with a large shank size</li> <li>·Reduce feed and depth of cut</li> </ul>
Sticky, chip-accumulated tumors	<ul style="list-style-type: none"> <li>·The selected material does not fit</li> <li>·The cutting edge is poorly sharp</li> <li>·The cutting speed is too low</li> <li>·The feed is too low</li> </ul>	<ul style="list-style-type: none"> <li>·Change to a material that is less affinities with the cut material</li> <li>·Increase the front corner</li> <li>·Reduce the inverted circle</li> <li>·Increase the cutting speed</li> <li>·Increase the feed</li> </ul>
Plastic deformation	<ul style="list-style-type: none"> <li>·The blade material is not heat resistant enough</li> <li>·The cutting speed is fast</li> <li>·The feed and depth of cut are too large</li> <li>·There is not enough cutting oil</li> </ul>	<ul style="list-style-type: none"> <li>·Change to a material that is more resistant to crescent wear</li> <li>·Increase the front corner</li> <li>·Reduce cutting speed</li> <li>·Reduce feed and depth of cut</li> <li>·Full supply of cutting oil</li> </ul>
damage	<ul style="list-style-type: none"> <li>·The tool material is not wear-resistant enough</li> <li>·The front corner is too small</li> <li>·The cutting speed is fast</li> </ul>	<ul style="list-style-type: none"> <li>·Choose a material with high wear resistance</li> <li>·Increase the front corner</li> <li>·Change the boundary position where the depth of the cut changes</li> </ul>

## The Service Process

According to your repair needs, in order to ensure the original quality as the premise of the shortest possible lead time, after the finished tool has been tested and checked, the first time in the fastest transport to return your tool. Grinding cycle: 7 working days



## Technical Guidance and Car Threading Foundation

	Question	The Cause	Correction
Damage to the cutting edge	Extreme wear of the cutting edge	Tool material	Use tool materials with higher wear resistance
		Cutting conditions	Reduce cutting speed. Appropriate amount of coolant, concentration Change the number of passes
	Left and right wear is uneven	The installation of the tool	For the lead angle of the thread, confirm that the cutting edge inclination is suitable Confirm that the tool is clamped correctly
		Cutting conditions	Change to correct single-edged cutting or interactive single-edged cutting
	small collapse	Cutting conditions	Increase the cutting speed when adhesion to a chip tumor
	damage	The embedding of the cutting	Supply a large amount of cutting oil to the edge first
		Cutting conditions	Increase the number of passes and reduce the depth of cut each pass Tool is separated during roughing and finishing
Shape Accuracy	Finished surface roughness is not good	Cutting conditions	When there is a cracking condition in low-speed machining, increase the cutting speed When vibration occurs, reduce the cutting speed. The amount of depth of the last cut of the last pass is increased by an hour
		Tool material	Use tool materials that are more wear resistant
		Inappropriate cutting edge inclination	To ensure the rear corners on the side of the blade, select the correct gasket
	The thread shape is poor	The installation of the tool	Make sure that the tool is clamped correctly
	The thread depth is not sufficient	The depth of cut is small	The confirmation of the depth of the cut
		Wear of the tool	Confirm the blade damage status of the tool first

## Technical Guidance and Milling Foundation

Serial number	Name	Ellipsis	Function	Effect
1	Axis forward angle Diameter forward angle	A.R. R.R.	Determine the direction, melting, axial force, etc. of the chip discharge	There are a variety of front angles from positive to negative (large to small). Positive and negative, positive and negative, negative, and negative are typical combinations
2	Outer cut edge angle (main angle)	Cutting conditions	Determine the thickness of the cutting and the direction of discharge	When the angle is large: chip thickness reduction Cutting load eases
3	True front angle (tool forward inclination)	Cutting conditions	Effective front corner	When the angle is positive (large): good cutting, not easy to stick, cutting edge strength is lower, angle is negative (small): The cutting edge is stronger, but it sticks easily
4	Cut the edge angle	The embedding of the cutting	Determines the direction in which the chips are discharged	When the angle is positive (large): discharge is good, the cutting resistance is small, and the corner strength is worse
5	End face cutting edge angle (phase angle)	Cutting conditions	Determines the roughness of the finished surface	When the angle is negative (small): The surface roughness increases
6	Rear corner (gap angle)	Cutting conditions	Determines edge strength, tool life, vibration, etc	

## Technical Guidance and End Milling Machinery Problems and Countermeasures

	Question	The Cause		That's Right
Damage to the Cutting Edge	Extreme wear	Cutting conditions	Feed fast	Reduce cutting speed, feed speed
		Tool shape	The cutting speed is fast	Select the appropriate peripheral corner
		Tool material	The corner of the knife is small after the outer week	Choose a master material with high wear resistance
Damage to the Cutting Edge	Small collapse	Cutting conditions Around the machine	Poor wear resistance	Select a coated blade
			Feed fast	Reduce the feed speed
			The depth of the cut is large The blade is long in length The clip is weakly clamped by the cutting material The tool installation is not stable	Reduce the depth of the cut, Reduce overhang Securely secure the cut material, Increase the grip strength of the tool
Damage to the Cutting Edge	Loss	Cutting conditions Sword shape	Feed fast	Reduce the feed speed
			The depth of the cut is large	Reduce the depth of the cut
			The blade is long in length Down-milling The core thickness is small	Minimize overhang Use a tool with a short blade Use the appropriate core thickness
Other	The wall collapsed	Cutting conditions Sword shape	Feed fast	Reduce the feed speed
			The depth of the cut is large	Reduce the depth of the cut
			The blade is long in length Down-milling The spiral angle is large The core is thick and thin	Reduce overhang Select Reverse Milling Use a milling cutter with a small helix angle Use a milling cutter with the appropriate core thickness
			Feed fast	Reduce the feed speed
Other	Poor finishing surface	Cutting conditions	The embedding of chips	Air-cooled implementation Increase the concave angle of the bottom edge
			Feed fast	Reduce the feed speed
			The depth of the cut is large	Reduce the depth of the cut
			The embedding of chips	Reduce cutting speed Choose down-milling
Other	Vibration in cutting	Cutting conditions Tool shape Around the machine	The cutting speed is fast	Reduce overhang
			Reverse mill cutting	Select the appropriate front corner
			The blade has a large overhang	Securely secure the cut material
			The front corner is large The clip is weakly clamped by the cutting material The tool installation is not stable	Increase the grip strength of the tool
Other	The cutting is blocked	Cutting conditions Tool shape	Feed fast	Reduce the feed speed
			The embedding of chips	Reduce the depth of the cut
			The depth of the cut is large	Reduce the number of edges
			Many blades	Air-cooled implementation