

**CBN**

**CBN Guidance For Grade And Chipbreaker**

**A30-33**

**CBN Standard Inserts**

**A34-94**

**CBN Application**

**A95**

**PCD**

**PCD Guidance For Grade And Chipbreaker**

**A96-100**

**PCD Standard Inserts**

**A101-129**

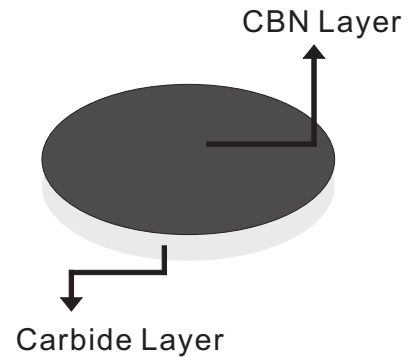
**PCD Application**

**A130-133**

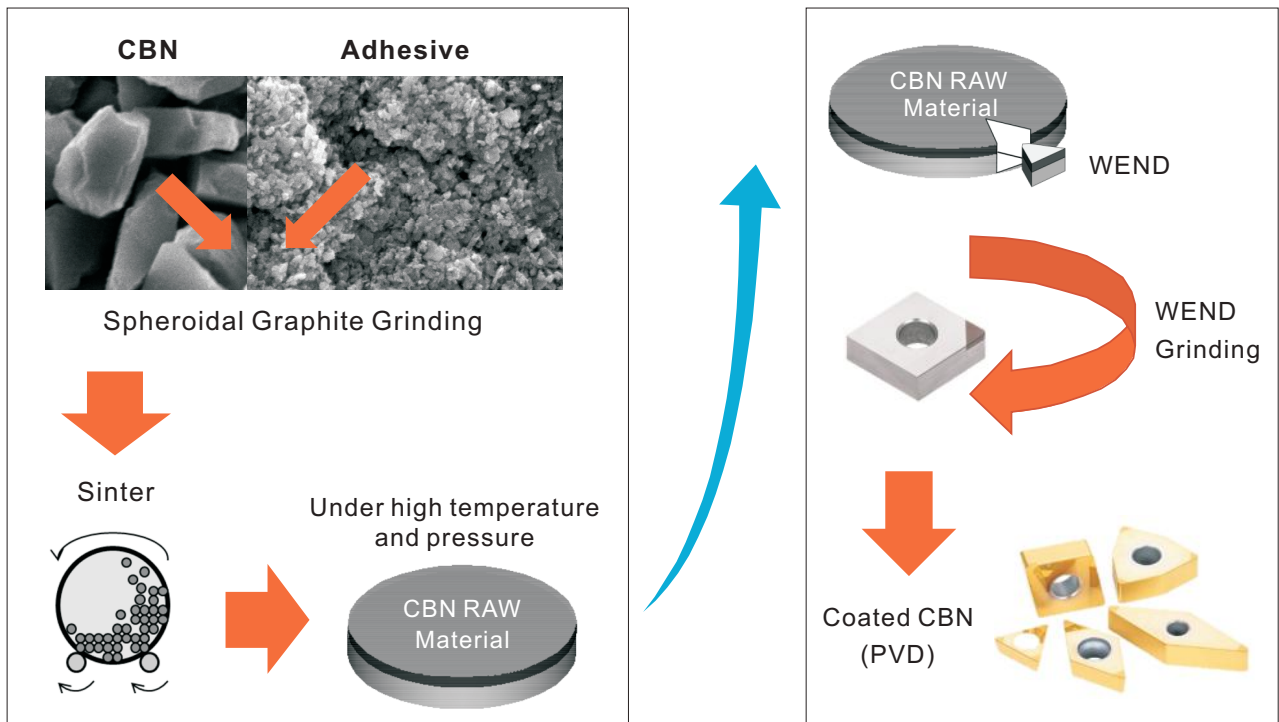
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

## Characteristics of Cubic Boron Nitride (CBN)

Cubic boron nitride (CBN) is an excellent tool material with high hardness, high heat resistance and high chemical inertness. It can be applied to difficult-to-machine materials such as hardened steel, cast iron, superalloy and powder metal. Due to its high temperature resistance, high hardness, strong cutting force and low friction coefficient, CBN inserts enable to produce workpieces with outstanding surface roughness and maintain long life, high efficiency and stable performance.



## CBN Production Process

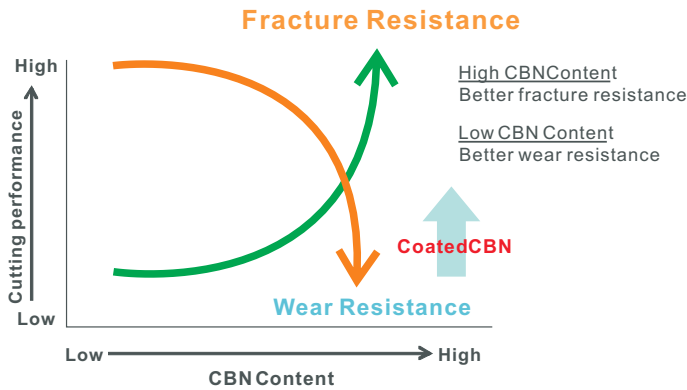


<b>Hardness Cutting Tool</b>	≥	<b>Hardness x 3 Workpiece Material</b>
Hardness of Carbide → 1500HV		Steel → 240HV <b>x3=720HV</b>
		Hardened Steel → 700HV <b>x3=2100HV</b>

**Hardness of CBN → 3000HV**

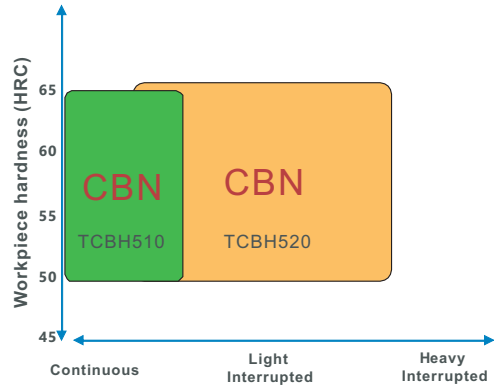
**Capable of processing high hardness materials**

Relationship curve between cutting performance and CBN content in processing hardened steel



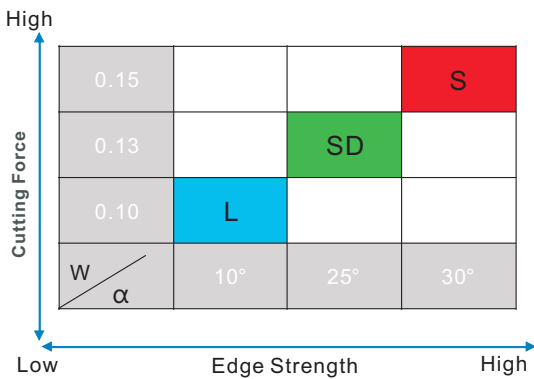
**Coating CBN increases wear resistance!**

CBN Application Range



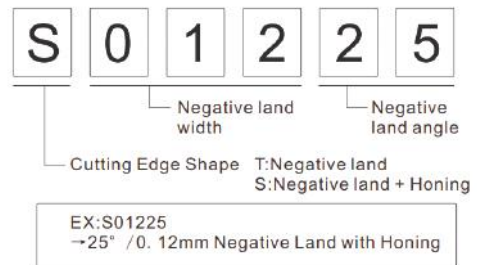
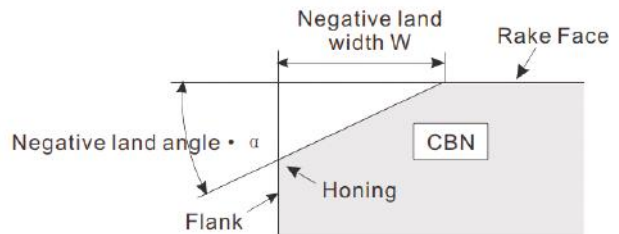
**CBN is suitable for processing workpieces With hardness exceeding HRC50**

Edge Treatment



SD: Standard Edge  
L: Low Cutting Force Edge  
S: Strong Edge

CBN Application Range



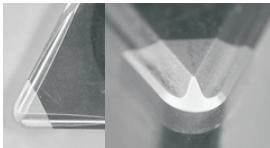
Insert
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## CBN Chipbreaker

Chipbreaker incorporated on the CBN cutting edge to maintain chip control capabilities throughout the machining process.

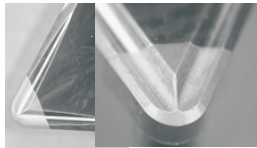
Unique chipbreaker design can be applied to both hardened and non-hardened parts with effective chip control.

### • Medium to Rough Cutting



DOC:  $ap=0.25\sim 0.75\text{mm}$   
 feed :  $f=0.05\sim 0.20\text{mm/rev}$

### • Rough Cutting



DOC:  $ap=0.50\sim 1.0\text{mm}$   
 feed :  $f=0.05\sim 0.20\text{mm/rev}$

**Finishing of Hardened Steel**

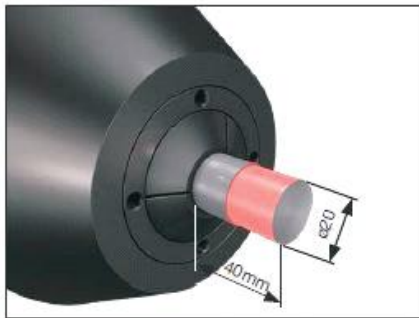
Without chip slot

With chip slot

**Work Material:** Carburised Steel (60HRC Automotive Component)  
**Tool No:** 2-CCGT060204-HF  
**Cutting Conditions:**  $V_c=80\text{m/min}$ ,  $f=0.08\text{mm/rev}$   
 $ap=0.15\text{mmWet}$

## Coated CBN

Excellent surface formed by chipbreaker



Due to low cutting force, chatter stability is greatly improved



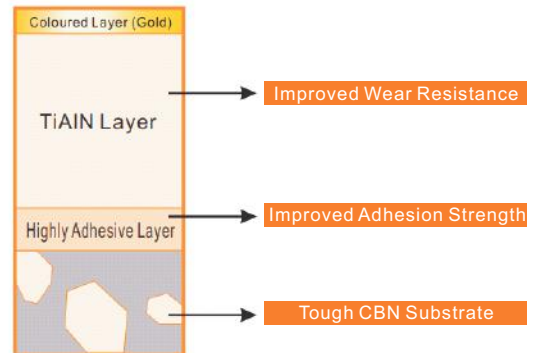
Competitor (without breaker)

### TCCH620



General-purpose grade suitable for typical hardened steel machining applications.  
 Achieves further stability in machining of wide range of hardened steel components.

### General-purpose Machining (Low to Medium speed, Unstable Cutting)



Application of highly wear-resistant TiAlN coating to a tough substrate. Machining stability in low-rigidity environments and high-load cutting is dramatically improved.



Recommended Grades

	Grade	CBN Content (%)	Grain Size (µm)	Work Material		Features	Application
Uncoated	TCBH510	50 to 55	3	H	Hardened Steel	General-purpose grade for hardened steel machining with a high degree of fracture and wear resistance.	Bearing Steel Carburised Steel
	TCBH520	60 to 65	2		Hardened Steel	Achieve ultimate cutting edge strength. Suitable for light interrupted cutting.	Bearing Steel Carburised Steel
	TCBK100	90 to 95	2	K	Gray Cast Iron	Grade exhibiting wear and fracture resistance in cutting of cast iron.	Cylinder Block and Head
	TCBX800	90 to 95	1	S	Sintered Alloy	Grade exhibiting improved wear and fracture resistance in cutting of sintered alloy.	Sintered Parts Valve Seat Ring
	TCBS700	90 to 95	4		Heat-resistant Alloy	Provides long tool life in the finishing of Heat-resistant Alloy	Aerospace Parts
coated	TCCH620	65 to 70	2	H	Hardened Steel	Utilising a tough substrate along with a highly wear-resistant and adhesive coating layer, to achieve long tool life in general-purpose to high-efficiency machining.	Bearing Steel Carburised Steel

Cutting Conditions

ISO	Work Material	Grade	Cutting Condition		
			Vc (m/min)	f (mm/rev)	ap(mm)
H	Mould Steel	TCBH510/TCBH520	90-110	0.1-0.2	0.1-0.5
	Hardened Steel (>HRC 45)	TCBH510/TCBH520	120-250	0.1-0.5	0.5-2.5
	Hardened Steel (>HRC 45)	TCCH620	90-110 150-250	0.1-0.2 0.1-0.5	0.1-0.5 0.5-2.5
K	Gray Cast Iron	TCBK100	400-1500	0.1-0.8	3.0
S	<16%Co Sintered Ni-based Heat-resistant Alloy	TCBX800 TCBS700	20-40 40-100	0.1-0.25 0.05-0.2	0.1-1.0 0.1-1.0

Insert Edge Specification Overview

ISO	Work Material	Grade	Standard				Low Cutting Force Type				Strong Edge Type			
			Code	α	W	Honing	Code	α	W	Honing	Code	α	W	Honing
H	Hardened Steel	TCBH510	S01015	15°	0.10	Yes	S01010	10°	0.1	Yes	S01530	30°	0.15	Yes
		TCBH520	S01325	25°	0.13	Yes					S03035	35°	0.30	Yes
		TCCH620												
K	Gray Cast Iron	TCBK100	S01520	20°	0.15	Yes	T01015	15°	0.1	No	S01530	30°	0.15	Yes
							HL	-	-	Yes	S03035	35°	0.30	Yes
S	Sintered Alloy Heat-resistant Alloy	TCBX800 TCBS700	S01325	25°	0.13	Yes	T01015	15°	0.1	No	S01530	30°	0.15	Yes
							HL	-	-	Yes	S03035	35°	0.30	Yes


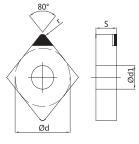
★ Customer can choose special insert edge according to exact demand




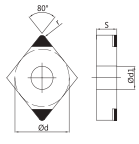
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			


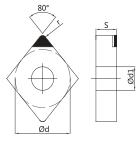
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	CNGA090302	●	●	●	●			1	Φ9.525	3.18	3.81	0.2	
	CNGA090304	●	●	●	●			1	Φ9.525	3.18	3.81	0.4	
	CNGA090306	●	●	●	●			1	Φ9.525	3.18	3.81	0.6	
	CNGA090308	●	●	●	●			1	Φ9.525	3.18	3.81	0.8	


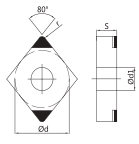
Multi-tip insert

	2-CNGA090302	●	●	●	●			2	Φ9.525	3.18	3.81	0.2	
	2-CNGA090304	●	●	●	●			2	Φ9.525	3.18	3.81	0.4	
	2-CNGA090306	●	●	●	●			2	Φ9.525	3.18	3.81	0.6	
	2-CNGA090308	●	●	●	●			2	Φ9.525	3.18	3.81	0.8	


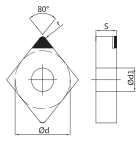
Single-tip insert

	CNGA09T302	●	●	●	●			1	Φ9.525	3.97	3.81	0.2	
	CNGA09T304	●	●	●	●			1	Φ9.525	3.97	3.81	0.4	
	CNGA09T306	●	●	●	●			1	Φ9.525	3.97	3.81	0.6	
	CNGA09T308	●	●	●	●			1	Φ9.525	3.97	3.81	0.8	

Multi-tip insert

	2-CNGA09T302	●	●	●	●			2	Φ9.525	3.97	3.81	0.2	
	2-CNGA09T304	●	●	●	●			2	Φ9.525	3.97	3.81	0.4	
	2-CNGA09T306	●	●	●	●			2	Φ9.525	3.97	3.81	0.6	
	2-CNGA09T308	●	●	●	●			2	Φ9.525	3.97	3.81	0.8	

Single-tip insert

	CNGA090402	●	●	●	●			1	Φ9.525	4.76	3.81	0.2	
	CNGA090404	●	●	●	●			1	Φ9.525	4.76	3.81	0.4	
	CNGA090408	●	●	●	●			1	Φ9.525	4.76	3.81	0.8	
	CNGA090412	●	●	●	●			1	Φ9.525	4.76	3.81	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


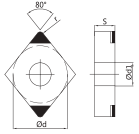

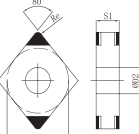
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


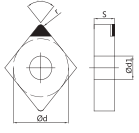
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


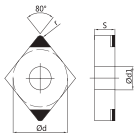

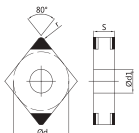
Multi-tip insert

	2-CNGA090402	●	●	●	●			2	Φ9.525	4.76	3.81	0.2	
	2-CNGA090404	●	●	●	●			2	Φ9.525	4.76	3.81	0.4	
	2-CNGA090408	●	●	●	●			2	Φ9.525	4.76	3.81	0.8	
	2-CNGA090412	●	●	●	●			2	Φ9.525	4.76	3.81	1.2	
	4-CNGA090402	●	●	●	●			4	Φ9.525	4.76	3.81	0.2	
	4-CNGA090404	●	●	●	●			4	Φ9.525	4.76	3.81	0.4	
	4-CNGA090408	●	●	●	●			4	Φ9.525	4.76	3.81	0.8	
	4-CNGA090412	●	●	●	●			4	Φ9.525	4.76	3.81	1.2	

Single-tip insert

	CNGA120402	●	●	●	●			1	Φ12.7	4.76	5.16	0.2	
	CNGA120404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	CNGA120408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	CNGA120412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	

Multi-tip insert

	2-CNGA120402	●	●	●	●			2	Φ12.7	4.76	5.16	0.2	
	2-CNGA120404	●	●	●	●			2	Φ12.7	4.76	5.16	0.4	
	2-CNGA120408	●	●	●	●			2	Φ12.7	4.76	5.16	0.8	
	2-CNGA120412	●	●	●	●			2	Φ12.7	4.76	5.16	1.2	
	4-CNGA120402	●	●	●	●			4	Φ12.7	4.76	5.16	0.2	
	4-CNGA120404	●	●	●	●			4	Φ12.7	4.76	5.16	0.4	
	4-CNGA120408	●	●	●	●			4	Φ12.7	4.76	5.16	0.8	
	4-CNGA120412	●	●	●	●			4	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


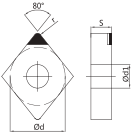
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		


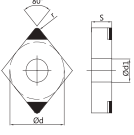
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


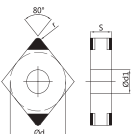
Single-tip insert

	CNGA160602	●	●	●	●			1	Φ15.875	6.35	6.35	0.2	
	CNGA160604	●	●	●	●			1	Φ15.875	6.35	6.35	0.4	
	CNGA160608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	CNGA160612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	


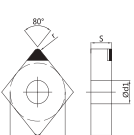
Multi-tip insert

	2-CNGA160602	●	●	●	●			2	Φ15.875	6.35	6.35	0.2	
	2-CNGA160604	●	●	●	●			2	Φ15.875	6.35	6.35	0.4	
	2-CNGA160608	●	●	●	●			2	Φ15.875	6.35	6.35	0.8	
	2-CNGA160612	●	●	●	●			2	Φ15.875	6.35	6.35	1.2	

Multi-tip insert

	4-CNGA160602	●	●	●	●			4	Φ15.875	6.35	6.35	0.2	
	4-CNGA160604	●	●	●	●			4	Φ15.875	6.35	6.35	0.4	
	4-CNGA160608	●	●	●	●			4	Φ15.875	6.35	6.35	0.8	
	4-CNGA160612	●	●	●	●			4	Φ15.875	6.35	6.35	1.2	

Single-tip insert

	CNGA190604	●	●	●	●			1	Φ19.05	6.35	7.94	0.4	
	CNGA190608	●	●	●	●			1	Φ19.05	6.35	7.94	0.8	
	CNGA190610	●	●	●	●			1	Φ19.05	6.35	7.94	1.0	
	CNGA190612	●	●	●	●			1	Φ19.05	6.35	7.94	1.2	
	CNGA190616	●	●	●	●			1	Φ19.05	6.35	7.94	1.6	
	CNGA190624	●	●	●	●			1	Φ19.05	6.35	7.94	2.4	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


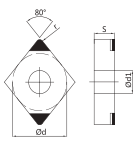

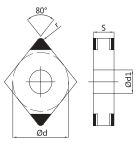
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●								
K	Cast Iron		●	●	●							
S	Superalloys				●				●	●		

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-CNGA190604	●	●	●	●			●	●			2		External Toolholder	
	2-CNGA190608	●	●	●	●			●	●			2			Internal Toolholder
	2-CNGA190610	●	●	●	●			●	●			2			
	2-CNGA190612	●	●	●	●			●	●			2			
	2-CNGA190616	●	●	●	●			●	●			2			
	2-CNGA190624	●	●	●	●			●	●			2			
	4-CNGA190604	●	●	●	●			●	●			4		PSC Toolholder	
	4-CNGA190608	●	●	●	●			●	●			4			
	4-CNGA190610	●	●	●	●			●	●			4			
	4-CNGA190612	●	●	●	●			●	●			4			
	4-CNGA190616	●	●	●	●			●	●			4			
	4-CNGA190624	●	●	●	●			●	●			4			

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool


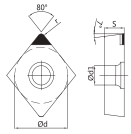
**CC** Rhombic 80°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		


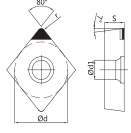
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


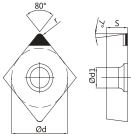
Single-tip insert

	CCMW03S102	●	●	●	●		1	Φ3.57	1.39	2.0	0.2	
	CCMW03S104	●	●	●	●		1	Φ3.57	1.39	2.0	0.4	
	CCMW04T002	●	●	●	●		1	Φ4.37	1.79	2.4	0.2	
	CCMW04T004	●	●	●	●		1	Φ4.37	1.79	2.4	0.4	


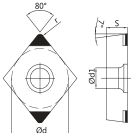
Single-tip insert

	CCGW050202	●	●	●	●		1	Φ5.56	2.38	2.4	0.2	
	CCGW050204	●	●	●	●		1	Φ5.56	2.38	2.4	0.4	
	CCGW050206	●	●	●	●		1	Φ5.56	2.38	2.4	0.6	


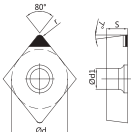
Single-tip insert

	CCGW060202	●	●	●	●		1	Φ6.35	2.38	2.8	0.2	
	CCGW060204	●	●	●	●		1	Φ6.35	2.38	2.8	0.4	
	CCGW060206	●	●	●	●		1	Φ6.35	2.38	2.8	0.6	
	CCGW060208	●	●	●	●		1	Φ6.35	2.38	2.8	0.8	

Multi-tip insert

	2-CCGW060202	●	●	●	●		2	Φ6.35	2.38	2.8	0.2	
	2-CCGW060204	●	●	●	●		2	Φ6.35	2.38	2.8	0.4	
	2-CCGW060206	●	●	●	●		2	Φ6.35	2.38	2.8	0.6	
	2-CCGW060208	●	●	●	●		2	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	CCMW080202	●	●	●	●		1	Φ7.94	2.38	3.4	0.2	
	CCMW080204	●	●	●	●		1	Φ7.94	2.38	3.4	0.4	
	CCMW080206	●	●	●	●		1	Φ7.94	2.38	3.4	0.6	
	CCMW080208	●	●	●	●		1	Φ7.94	2.38	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


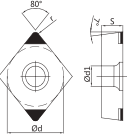
**CC** Rhombic 80°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


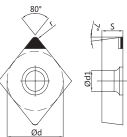
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


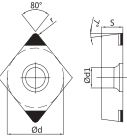
Multi-tip insert

	2-CCMW080202	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.2	
	2-CCMW080204	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.4	
	2-CCMW080206	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.6	
	2-CCMW080208	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.8	


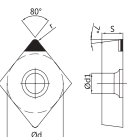
Single-tip insert

	CCGW09T302	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.2	
	CCGW09T304	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.4	
	CCGW09T306	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.6	
	CCGW09T308	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.8	


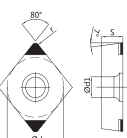
Multi-tip insert

	2-CCGW09T302	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.2	
	2-CCGW09T304	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.4	
	2-CCGW09T306	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.6	
	2-CCGW09T308	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.8	

Single-tip insert

	CCGW120402	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.2	
	CCGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	CCGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	CCGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	CCGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-CCGW120402	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.2	
	2-CCGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-CCGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-CCGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-CCGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool



**CP** Rhombic 80°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	CPGW050202	●	●	●	●			1	Φ5.56	2.38	2.4	0.2	
	CPGW050204	●	●	●	●			1	Φ5.56	2.38	2.4	0.4	
	CPGW050206	●	●	●	●			1	Φ5.56	2.38	2.4	0.6	

Single-tip insert

	CPGW060202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	CPGW060204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	CPGW060208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	

Multi-tip insert

	2-CPGW060202	●	●	●	●			2	Φ6.35	2.38	2.8	0.2	
	2-CPGW060204	●	●	●	●			2	Φ6.35	2.38	2.8	0.4	
	2-CPGW060208	●	●	●	●			2	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	CPGW080202	●	●	●	●			1	Φ7.94	2.38	2.8	0.2	
	CPGW080204	●	●	●	●			1	Φ7.94	2.38	2.8	0.4	
	CPGW080206	●	●	●	●			1	Φ7.94	2.38	2.8	0.6	
	CPGW080208	●	●	●	●			1	Φ7.94	2.38	2.8	0.8	

Multi-tip insert

	2-CPGW080202	●	●	●	●			2	Φ7.94	2.38	2.8	0.2	
	2-CPGW080204	●	●	●	●			2	Φ7.94	2.38	2.8	0.4	
	2-CPGW080206	●	●	●	●			2	Φ7.94	2.38	2.8	0.6	
	2-CPGW080208	●	●	●	●			2	Φ7.94	2.38	2.8	0.8	

Single-tip insert

	CPGW090302	●	●	●	●			1	Φ9.525	3.18	4.4	0.2	
	CPGW090304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	CPGW090306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	CPGW090308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool


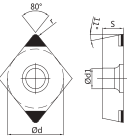
**CP** Rhombic 80°  
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●					●	●		


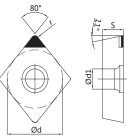
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


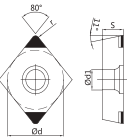
Multi-tip insert

	2-CPGW090302	●	●	●	●			●	●					
	2-CPGW090304	●	●	●	●			●	●					
	2-CPGW090306	●	●	●	●			●	●					
	2-CPGW090308	●	●	●	●			●	●					


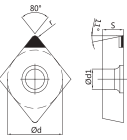
Single-tip insert

	CPGW09T302	●	●	●	●			●	●					
	CPGW09T304	●	●	●	●			●	●					
	CPGW09T306	●	●	●	●			●	●					
	CPGW09T308	●	●	●	●			●	●					

Multi-tip insert

	2-CPGW09T302	●	●	●	●			●	●					
	2-CPGW09T304	●	●	●	●			●	●					
	2-CPGW09T306	●	●	●	●			●	●					
	2-CPGW09T308	●	●	●	●			●	●					

Single-tip insert

	CPGW120402	●	●	●	●			●	●					
	CPGW120404	●	●	●	●			●	●					
	CPGW120406	●	●	●	●			●	●					
	CPGW120408	●	●	●	●			●	●					
	CPGW120410	●	●	●	●			●	●					
	CPGW120412	●	●	●	●			●	●					

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool


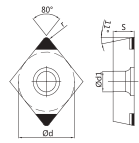
**CP** Rhombic 80°  
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-CPGW120402	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	0.2	
	2-CPGW120404	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	0.4	
	2-CPGW120406	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	0.6	
	2-CPGW120408	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	0.8	
	2-CPGW120410	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	1.0	
	2-CPGW120412	●	●	●	●		●	●	2	Φ12.7	4.76	5.5	1.2	

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool


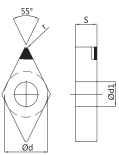
**DN** Rhombic 55°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●		●	●


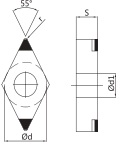
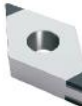
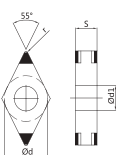
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


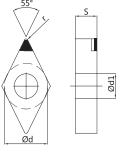
Single-tip insert

	DNGA110402	●	●	●	●			1	Φ9.525	4.76	3.8	0.2	
	DNGA110404	●	●	●	●			1	Φ9.525	4.76	3.8	0.4	
	DNGA110406	●	●	●	●			1	Φ9.525	4.76	3.8	0.6	
	DNGA110408	●	●	●	●			1	Φ9.525	4.76	3.8	0.8	

Multi-tip insert

	2-DNGA110402	●	●	●	●			2	Φ9.525	4.76	3.8	0.2	
	2-DNGA110404	●	●	●	●			2	Φ9.525	4.76	3.8	0.4	
	2-DNGA110406	●	●	●	●			2	Φ9.525	4.76	3.8	0.6	
	2-DNGA110408	●	●	●	●			2	Φ9.525	4.76	3.8	0.8	
	4-DNGA110402	●	●	●	●			4	Φ9.525	4.76	3.8	0.2	
	4-DNGA110404	●	●	●	●			4	Φ9.525	4.76	3.8	0.4	
	4-DNGA110406	●	●	●	●			4	Φ9.525	4.76	3.8	0.6	
	4-DNGA110408	●	●	●	●			4	Φ9.525	4.76	3.8	0.8	

Single-tip insert

	DNGA150402	●	●	●	●			1	Φ12.7	4.76	5.16	0.2	
	DNGA150404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	DNGA150406	●	●	●	●			1	Φ12.7	4.76	5.16	0.6	
	DNGA150408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	DNGA150410	●	●	●	●			1	Φ12.7	4.76	5.16	1.0	
	DNGA150412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	
	DNGA150416	●	●	●	●			1	Φ12.7	4.76	5.16	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


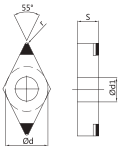

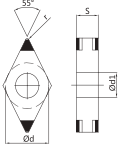
**DN** Rhombic 55°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


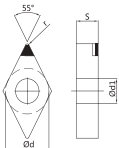
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-DNGA150402	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.2	
	2-DNGA150404	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.4	
	2-DNGA150406	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.6	
	2-DNGA150408	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.8	
	2-DNGA150410	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.0	
	2-DNGA150412	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.2	
	2-DNGA150416	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.6	
	4-DNGA150402	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.2	
	4-DNGA150404	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.4	
	4-DNGA150406	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.6	
	4-DNGA150408	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.8	
	4-DNGA150410	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.0	
	4-DNGA150412	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.2	
	4-DNGA150416	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.6	

Single-tip insert

	DNGA150604	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.4	
	DNGA150606	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.6	
	DNGA150608	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.8	
	DNGA150610	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.0	
	DNGA150612	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.2	
	DNGA150616	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.6	


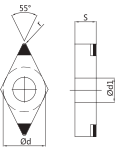
**DN** Rhombic 55°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys			●					●	●			


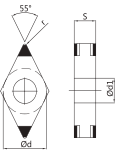
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCC-H620	TCBK100						


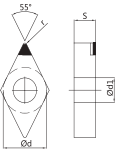
Multi-tip insert

	2-DNGA150604	●	●	●	●			2	Φ12.7	6.35	5.16	0.4	
	2-DNGA150606	●	●	●	●			2	Φ12.7	6.35	5.16	0.6	
	2-DNGA150608	●	●	●	●			2	Φ12.7	6.35	5.16	0.8	
	2-DNGA150610	●	●	●	●			2	Φ12.7	6.35	5.16	1.0	
	2-DNGA150612	●	●	●	●			2	Φ12.7	6.35	5.16	1.2	
	2-DNGA150616	●	●	●	●			2	Φ12.7	6.35	5.16	1.6	

Multi-tip insert

	4-DNGA150604	●	●	●	●			4	Φ12.7	6.35	5.16	0.4	
	4-DNGA150606	●	●	●	●			4	Φ12.7	6.35	5.16	0.6	
	4-DNGA150608	●	●	●	●			4	Φ12.7	6.35	5.16	0.8	
	4-DNGA150610	●	●	●	●			4	Φ12.7	6.35	5.16	1.0	
	4-DNGA150612	●	●	●	●			4	Φ12.7	6.35	5.16	1.2	
	4-DNGA150616	●	●	●	●			4	Φ12.7	6.35	5.16	1.6	

Single-tip insert

	DNGA190606	●	●	●	●			1	Φ15.875	6.35	6.35	0.6	
	DNGA190608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	DNGA190610	●	●	●	●			1	Φ15.875	6.35	6.35	1.0	
	DNGA190612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	
	DNGA190616	●	●	●	●			1	Φ15.875	6.35	6.35	1.6	

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting / Grooving  
 Miniature Tool


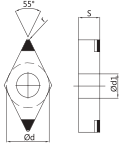

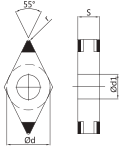
**DN** Rhombic 55°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-DNGA190606	●	●	●	●			●	●	2	Φ15.875	6.35	6.35	0.6	
	2-DNGA190608	●	●	●	●			●	●	2	Φ15.875	6.35	6.35	0.8	
	2-DNGA190610	●	●	●	●			●	●	2	Φ15.875	6.35	6.35	1.0	
	2-DNGA190612	●	●	●	●			●	●	2	Φ15.875	6.35	6.35	1.2	
	2-DNGA190616	●	●	●	●			●	●	2	Φ15.875	6.35	6.35	1.6	
	4-DNGA190606	●	●	●	●			●	●	4	Φ15.875	6.35	6.35	0.6	
	4-DNGA190608	●	●	●	●			●	●	4	Φ15.875	6.35	6.35	0.8	
	4-DNGA190610	●	●	●	●			●	●	4	Φ15.875	6.35	6.35	1.0	
	4-DNGA190612	●	●	●	●			●	●	4	Φ15.875	6.35	6.35	1.2	
	4-DNGA190616	●	●	●	●			●	●	4	Φ15.875	6.35	6.35	1.6	

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting , Grooving  
 Miniature Tool




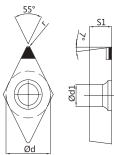
**DC** Rhombic 55°  
Positive 7°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys				●			●	●	


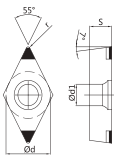
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


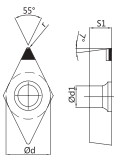
Single-tip insert

	DCGW070202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	DCGW070204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	DCGW070206	●	●	●	●			1	Φ6.35	2.38	2.8	0.6	
	DCGW070208	●	●	●	●			1	Φ6.35	2.3	2.8	0.8	


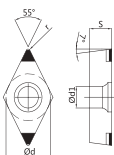
Multi-tip insert

	2-DCGW070202	●	●	●	●			2	Φ6.35	2.38	2.8	0.2	
	2-DCGW070204	●	●	●	●			2	Φ6.35	2.38	2.8	0.4	
	2-DCGW070206	●	●	●	●			2	Φ6.35	2.38	2.8	0.6	
	2-DCGW070208	●	●	●	●			2	Φ6.35	2.38	2.8	0.8	


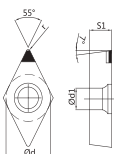
Single-tip insert

	DCGW090202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	DCGW090204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	DCGW090206	●	●	●	●			1	Φ7.94	2.38	3.4	0.6	
	DCGW090208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-DCGW090202	●	●	●	●			2	Φ7.94	2.38	3.4	0.2	
	2-DCGW090204	●	●	●	●			2	Φ7.94	2.38	3.4	0.4	
	2-DCGW090206	●	●	●	●			2	Φ7.94	2.38	3.4	0.6	
	2-DCGW090208	●	●	●	●			2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	DCGW110302	●	●	●	●			1	Φ9.525	3.18	3.4	0.2	
	DCGW110304	●	●	●	●			1	Φ9.525	3.18	3.4	0.4	
	DCGW110306	●	●	●	●			1	Φ9.525	3.18	3.4	0.6	
	DCGW110308	●	●	●	●			1	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


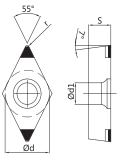
**DC** Rhombic 55°  
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron				●								
S	Superalloys							●	●				


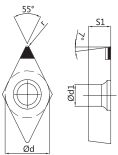
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


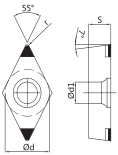
Multi-tip insert

	2-DCGW110302	●	●	●	●			2	Φ9.525	3.18	3.4	0.2	
	2-DCGW110304	●	●	●	●			2	Φ9.525	3.18	3.4	0.4	
	2-DCGW110306	●	●	●	●			2	Φ9.525	3.18	3.4	0.6	
	2-DCGW110308	●	●	●	●			2	Φ9.525	3.18	3.4	0.8	


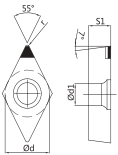
Single-tip insert

	DCGW11T302	●	●	●	●			1	Φ9.525	3.97	4.4	0.2	
	DCGW11T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	DCGW11T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	DCGW11T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	


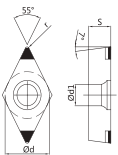
Multi-tip insert

	2-DCGW11T302	●	●	●	●			2	Φ9.525	3.97	4.4	0.2	
	2-DCGW11T304	●	●	●	●			2	Φ9.525	3.97	4.4	0.4	
	2-DCGW11T306	●	●	●	●			2	Φ9.525	3.97	4.4	0.6	
	2-DCGW11T308	●	●	●	●			2	Φ9.525	3.97	4.4	0.8	

Single-tip insert

	DCGW110402	●	●	●	●			1	Φ9.525	4.76	4.5	0.2	
	DCGW110404	●	●	●	●			1	Φ9.525	4.76	4.5	0.4	
	DCGW110406	●	●	●	●			1	Φ9.525	4.76	4.5	0.6	
	DCGW110408	●	●	●	●			1	Φ9.525	4.76	4.5	0.8	

Multi-tip insert

	2-DCGW110402	●	●	●	●			2	Φ9.525	4.76	3.4	0.2	
	2-DCGW110404	●	●	●	●			2	Φ9.525	4.76	4.5	0.4	
	2-DCGW110406	●	●	●	●			2	Φ9.525	4.76	4.5	0.6	
	2-DCGW110408	●	●	●	●			2	Φ9.525	4.76	4.5	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


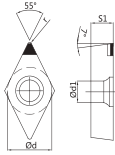
**DC** Rhombic 55°  
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


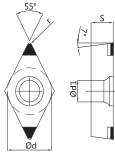
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	DCGW150404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	DCGW150406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	DCGW150408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	DCGW150410	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.0	
	DCGW150412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	
	DCGW150416	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.6	

Multi-tip insert

	2-DCGW150404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-DCGW150406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-DCGW150408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-DCGW150410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-DCGW150412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	
	2-DCGW150416	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


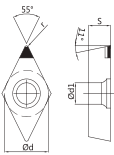
**DP** Rhombic 55°  
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			


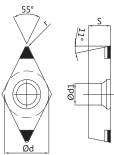
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


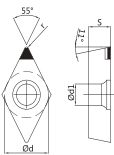
Single-tip insert

	DPGW070202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	DPGW070204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	DPGW070206	●	●	●	●			1	Φ6.35	2.38	2.8	0.6	
	DPGW070208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	


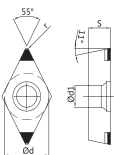
Multi-tip insert

	2-DPGW070202	●	●	●	●			2	Φ6.35	2.38	2.8	0.2	
	2-DPGW070204	●	●	●	●			2	Φ6.35	2.38	2.8	0.4	
	2-DPGW070206	●	●	●	●			2	Φ6.35	2.38	2.8	0.6	
	2-DPGW070208	●	●	●	●			2	Φ6.35	2.38	2.8	0.8	


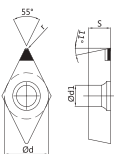
Single-tip insert

	DPGW090202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	DPGW090204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	DPGW090206	●	●	●	●			1	Φ7.94	2.38	3.4	0.6	
	DPGW090208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-DPGW090202	●	●	●	●			2	Φ7.94	2.38	3.4	0.2	
	2-DPGW090204	●	●	●	●			2	Φ7.94	2.38	3.4	0.4	
	2-DPGW090206	●	●	●	●			2	Φ7.94	2.38	3.4	0.6	
	2-DPGW090208	●	●	●	●			2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	DPGW110302	●	●	●	●			1	Φ9.525	3.18	3.4	0.2	
	DPGW110304	●	●	●	●			1	Φ9.525	3.18	3.4	0.4	
	DPGW110306	●	●	●	●			1	Φ9.525	3.18	3.4	0.6	
	DPGW110308	●	●	●	●			1	Φ9.525	3.18	3.4	0.8	

Insert  
External Toolholder  
Internal Toolholder  
PSC Toolholder  
Threading  
Parting ,Grooving  
Miniature Tool


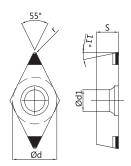
**DP** Rhombic 55°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


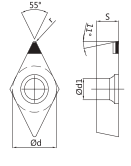
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


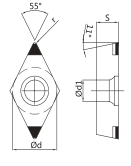
Multi-tip insert

	2-DPGW110302	●	●	●	●			●	●					
	2-DPGW110304	●	●	●	●			●	●					
	2-DPGW110306	●	●	●	●			●	●					
	2-DPGW110308	●	●	●	●			●	●					


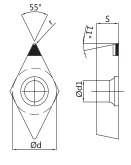
Single-tip insert

	DPGW11T302	●	●	●	●			●	●					
	DPGW11T304	●	●	●	●			●	●					
	DPGW11T306	●	●	●	●			●	●					
	DPGW11T308	●	●	●	●			●	●					

Multi-tip insert

	2-DPGW11T302	●	●	●	●			●	●					
	2-DPGW11T304	●	●	●	●			●	●					
	2-DPGW11T306	●	●	●	●			●	●					
	2-DPGW11T308	●	●	●	●			●	●					

Single-tip insert

	DPGW110402	●	●	●	●			●	●					
	DPGW110404	●	●	●	●			●	●					
	DPGW110406	●	●	●	●			●	●					
	DPGW110408	●	●	●	●			●	●					

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool


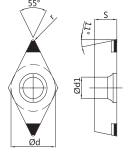
**DP** Rhombic 55°  
Positive 11°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●						
S	Superalloys			●				●	●	


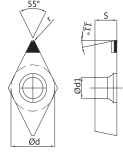
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


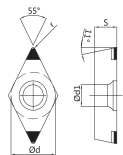
Multi-tip insert

	2-DPGW110402	●	●	●	●			2	Φ9.525	4.76	3.4	0.2	
	2-DPGW110404	●	●	●	●			2	Φ9.525	4.76	3.4	0.4	
	2-DPGW110406	●	●	●	●			2	Φ9.525	4.76	3.4	0.6	
	2-DPGW110408	●	●	●	●			2	Φ9.525	4.76	3.4	0.8	

Single-tip insert

	DPGW150404	●	●	●	●			1	Φ12.7	4.76	5.5	0.4	
	DPGW150406	●	●	●	●			1	Φ12.7	4.76	5.5	0.6	
	DPGW150408	●	●	●	●			1	Φ12.7	4.76	5.5	0.8	
	DPGW150410	●	●	●	●			1	Φ12.7	4.76	5.5	1.0	
	DPGW150412	●	●	●	●			1	Φ12.7	4.76	5.5	1.2	
	DPGW150416	●	●	●	●			1	Φ12.7	4.76	5.5	1.6	

Multi-tip insert

	2-DPGW150404	●	●	●	●			2	Φ12.7	4.76	5.5	0.4	
	2-DPGW150406	●	●	●	●			2	Φ12.7	4.76	5.5	0.6	
	2-DPGW150408	●	●	●	●			2	Φ12.7	4.76	5.5	0.8	
	2-DPGW150410	●	●	●	●			2	Φ12.7	4.76	5.5	1.0	
	2-DPGW150412	●	●	●	●			2	Φ12.7	4.76	5.5	1.2	
	2-DPGW150416	●	●	●	●			2	Φ12.7	4.76	5.5	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


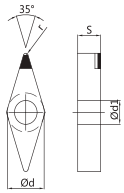
**VN** Rhombic 35°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


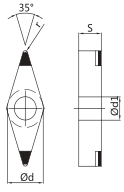

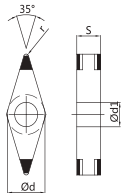
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	VNGA160402	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.2	
	VNGA160404	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.4	
	VNGA160406	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.6	
	VNGA160408	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.8	
	VNGA160410	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	1.0	
	VNGA160412	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	1.2	

Multi-tip insert

	2-VNGA160402	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.2	
	2-VNGA160404	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.4	
	2-VNGA160406	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.6	
	2-VNGA160408	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.8	
	2-VNGA160410	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	1.0	
	2-VNGA160412	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	1.2	
	4-VNGA160402	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.2	
	4-VNGA160404	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.4	
	4-VNGA160406	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.6	
	4-VNGA160408	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.8	
	4-VNGA160410	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	1.0	
	4-VNGA160412	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


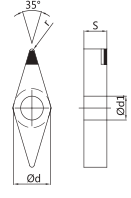

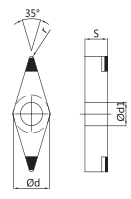

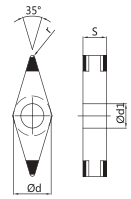


Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting , Grooving  
 Miniature Tool

**VN** Rhombic 35°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	VNGA220410	●	●	●	●			1	Φ12.7	4.76	5.16	1.0	
	VNGA220412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	
	VNGA220416	●	●	●	●			1	Φ12.7	4.76	5.16	1.6	
	VNGA220404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	VNGA220408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
Multi-tip insert													
	2-VNGA220404	●	●	●	●			2	Φ12.7	4.76	5.16	0.4	
	2-VNGA220408	●	●	●	●			2	Φ12.7	4.76	5.16	0.8	
	2-VNGA220410	●	●	●	●			2	Φ12.7	4.76	5.16	1.0	
	2-VNGA220412	●	●	●	●			2	Φ12.7	4.76	5.16	1.2	
	2-VNGA220416	●	●	●	●			2	Φ12.7	4.76	5.16	1.6	
	4-VNGA220404	●	●	●	●			4	Φ12.7	4.76	5.16	0.4	
	4-VNGA220408	●	●	●	●			4	Φ12.7	4.76	5.16	0.8	
	4-VNGA220410	●	●	●	●			4	Φ12.7	4.76	5.16	1.0	
	4-VNGA220412	●	●	●	●			4	Φ12.7	4.76	5.16	1.2	
	4-VNGA220416	●	●	●	●			4	Φ12.7	4.76	5.16	1.6	


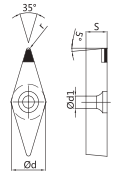
**VB** Rhombic 35°  
Positive 5°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


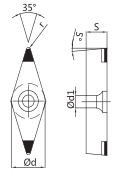
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


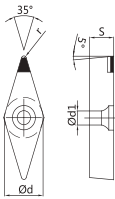
Single-tip insert

	VBGW110302	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.2	
	VBGW110304	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.4	
	VBGW110306	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.6	
	VBGW110308	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.8	


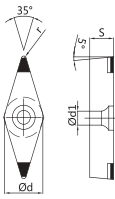
Multi-tip insert

	2-VBGW110302	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.2	
	2-VBGW110304	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.4	
	2-VBGW110306	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.6	
	2-VBGW110308	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.8	

Single-tip insert

	VBGW160404	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.4	
	VBGW160406	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.6	
	VBGW160408	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.8	
	VBGW160410	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	1.0	
	VBGW160412	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	1.2	

Multi-tip insert

	2-VBGW160404	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.4	
	2-VBGW160406	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.6	
	2-VBGW160408	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.8	
	2-VBGW160410	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	1.0	
	2-VBGW160412	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool

**VC** Rhombic 35°  
Positive 7°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys					●			●	●

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	VCGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	VCGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	VCGW080206	●	●	●	●			1	Φ4.76	2.38	2.3	0.6	
	VCGW080208	●	●	●	●			1	Φ4.76	2.38	2.3	0.8	

Multi-tip insert

	2-VCGW080202	●	●	●	●			2	Φ4.76	2.38	2.3	0.2	
	2-VCGW080204	●	●	●	●			2	Φ4.76	2.38	2.3	0.4	
	2-VCGW080206	●	●	●	●			2	Φ4.76	2.38	2.3	0.6	
	2-VCGW080208	●	●	●	●			2	Φ4.76	2.38	2.3	0.8	

Single-tip insert

	VCGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	VCGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	VCGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	VCGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	2-VCGW110302	●	●	●	●			2	Φ6.35	3.18	2.8	0.2	
	2-VCGW110304	●	●	●	●			2	Φ6.35	3.18	2.8	0.4	
	2-VCGW110306	●	●	●	●			2	Φ6.35	3.18	2.8	0.6	
	2-VCGW110308	●	●	●	●			2	Φ6.35	3.18	2.8	0.8	

Single-tip insert

	VCGW160404	●	●	●	●			1	Φ9.525	4.67	4.4	0.4	
	VCGW160406	●	●	●	●			1	Φ9.525	4.67	4.4	0.6	
	VCGW160408	●	●	●	●			1	Φ9.525	4.67	4.4	0.8	
	VCGW160410	●	●	●	●			1	Φ9.525	4.67	4.4	1.0	
	VCGW160412	●	●	●	●			1	Φ9.525	4.67	4.4	1.2	


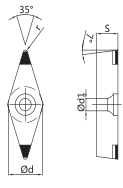
**VC** Rhombic 35°  
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			


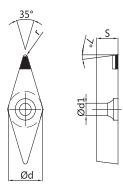
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


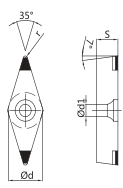
Multi-tip insert

	2-VCGW160404	●	●	●	●			●	●					
	2-VCGW160406	●	●	●	●			●	●					
	2-VCGW160408	●	●	●	●			●	●					
	2-VCGW160410	●	●	●	●			●	●					
	2-VCGW160412	●	●	●	●			●	●					

Single-tip insert

	VCMW220512	●	●	●	●			●	●					
	VCMW220516	●	●	●	●			●	●					
	VCMW220520	●	●	●	●			●	●					

Multi-tip insert

	2-VCMW220512	●	●	●	●			●	●					
	2-VCMW220516	●	●	●	●			●	●					
	2-VCMW220520	●	●	●	●			●	●					

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


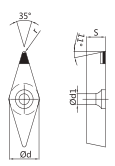
**VP** Rhombic 35°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


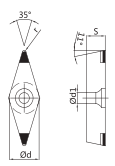
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


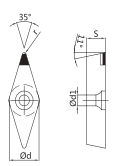
Single-tip insert

	VPGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	VPGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	VPGW080208	●	●	●	●			1	Φ4.76	2.38	2.3	0.8	


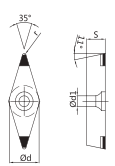
Multi-tip insert

	2-VPGW080204	●	●	●	●			2	Φ4.76	2.38	2.3	0.4	
	2-VPGW080208	●	●	●	●			2	Φ4.76	2.38	2.3	0.8	

Single-tip insert

	VPGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	VPGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	VPGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	VPGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	2-VPGW110302	●	●	●	●			2	Φ6.35	3.18	2.8	0.2	
	2-VPGW110304	●	●	●	●			2	Φ6.35	3.18	2.8	0.4	
	2-VPGW110306	●	●	●	●			2	Φ6.35	3.18	2.8	0.6	
	2-VPGW110308	●	●	●	●			2	Φ6.35	3.18	2.8	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


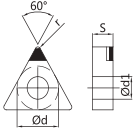
**TN** Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


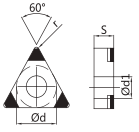
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


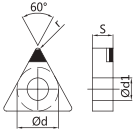
Single-tip insert

	TNGA110302	●	●	●	●			1	Φ6.35	3.18	2.3	0.2	
	TNGA110304	●	●	●	●			1	Φ6.35	3.18	2.3	0.4	
	TNGA110306	●	●	●	●			1	Φ6.35	3.18	2.3	0.6	
	TNGA110308	●	●	●	●			1	Φ6.35	3.18	2.3	0.8	


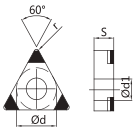
Multi-tip insert

	3-TNGA110302	●	●	●	●			3	Φ6.35	3.18	2.3	0.2	
	3-TNGA110304	●	●	●	●			3	Φ6.35	3.18	2.3	0.4	
	3-TNGA110306	●	●	●	●			3	Φ6.35	3.18	2.3	0.6	
	3-TNGA110308	●	●	●	●			3	Φ6.35	3.18	2.3	0.8	


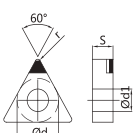
Single-tip insert

	TNGA130304	●	●	●	●			1	Φ7.95	3.18	3.15	0.4	
	TNGA130306	●	●	●	●			1	Φ7.95	3.18	3.15	0.6	
	TNGA130308	●	●	●	●			1	Φ7.95	3.18	3.15	0.8	
	TNGA130312	●	●	●	●			1	Φ7.95	3.18	3.15	1.2	

Multi-tip insert

	3-TNGA130304	●	●	●	●			3	Φ7.95	3.18	3.15	0.4	
	3-TNGA130306	●	●	●	●			3	Φ7.95	3.18	3.15	0.6	
	3-TNGA130308	●	●	●	●			3	Φ7.95	3.18	3.15	0.8	
	3-TNGA130312	●	●	●	●			3	Φ7.95	3.18	3.15	1.2	

Single-tip insert

	TNGA160404	●	●	●	●			1	Φ9.525	4.46	3.8	0.4	
	TNGA160406	●	●	●	●			1	Φ9.525	4.76	3.8	0.6	
	TNGA160408	●	●	●	●			1	Φ9.525	4.76	3.8	0.8	
	TNGA160410	●	●	●	●			1	Φ9.525	4.76	3.8	1.0	
	TNGA160412	●	●	●	●			1	Φ9.525	4.76	3.8	1.2	
	TNGA160416	●	●	●	●			1	Φ9.525	4.76	3.8	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool

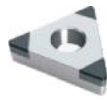
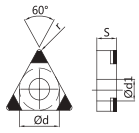
**TN** Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	

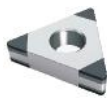
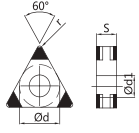
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						

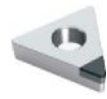
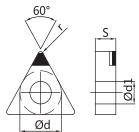
Multi-tip insert

	3-TNGA160404	●	●	●	●							
	3-TNGA160406	●	●	●	●							
	3-TNGA160408	●	●	●	●							
	3-TNGA160410	●	●	●	●							
	3-TNGA160412	●	●	●	●							
	3-TNGA160416	●	●	●	●							

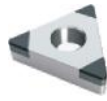
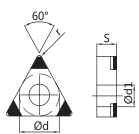
Multi-tip insert

	6-TNGA160404	●	●	●	●							
	6-TNGA160406	●	●	●	●							
	6-TNGA160408	●	●	●	●							
	6-TNGA160410	●	●	●	●							
	6-TNGA160412	●	●	●	●							
	6-TNGA160416	●	●	●	●							

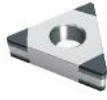
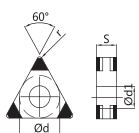
Single-tip insert

	TNGA220408	●	●	●	●							
	TNGA220412	●	●	●	●							
	TNGA220416	●	●	●	●							

Multi-tip insert

	3-TNGA220408	●	●	●	●							
	3-TNGA220412	●	●	●	●							
	3-TNGA220416	●	●	●	●							

Multi-tip insert

	6-TNGA220408	●	●	●	●							
	6-TNGA220412	●	●	●	●							
	6-TNGA220416	●	●	●	●							

Insert  
External Toolholder  
Internal Toolholder  
PSC Toolholder  
Threading  
Parting , Grooving  
Miniature Tool



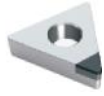
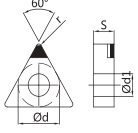
**TN** Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


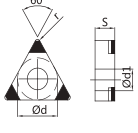
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

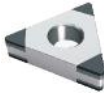
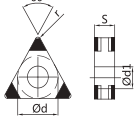
Single-tip insert

	TNGA270608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	TNGA270610	●	●	●	●			1	Φ15.875	6.35	6.35	1.0	
	TNGA270612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	
	TNGA270616	●	●	●	●			1	Φ15.875	6.35	6.35	1.6	
	TNGA270620	●	●	●	●			1	Φ15.875	6.35	6.35	2.0	

Multi-tip insert

	3-TNGA270608	●	●	●	●			3	Φ15.875	6.35	6.35	0.8	
	3-TNGA270610	●	●	●	●			3	Φ15.875	6.35	6.35	1.0	
	3-TNGA270612	●	●	●	●			3	Φ15.875	6.35	6.35	1.2	
	3-TNGA270616	●	●	●	●			3	Φ15.875	6.35	6.35	1.6	
	3-TNGA270620	●	●	●	●			3	Φ15.875	6.35	6.35	2.0	

Multi-tip insert

	6-TNGA270608	●	●	●	●			6	Φ15.875	6.35	6.35	0.8	
	6-TNGA270610	●	●	●	●			6	Φ15.875	6.35	6.35	1.0	
	6-TNGA270612	●	●	●	●			6	Φ15.875	6.35	6.35	1.2	
	6-TNGA270616	●	●	●	●			6	Φ15.875	6.35	6.35	1.6	
	6-TNGA270620	●	●	●	●			6	Φ15.875	6.35	6.35	2.0	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving


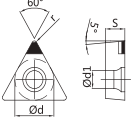
Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting , Grooving  
 Miniature Tool

**TB** Triangular 60°  
Positive 5°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	TBGW060102	●	●	●	●			1	Φ3.97	1.59	2.2	0.2	
	TBGW060104	●	●	●	●			1	Φ3.97	1.59	2.2	0.4	


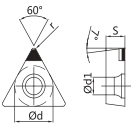
**TC** Triangular 60°  
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron			●									
S	Superalloys							●	●				


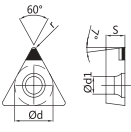
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


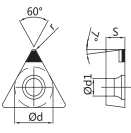
Single-tip insert

	TCGW060102	●	●	●	●			1	Φ3.97	1.59	2.2	0.2	
	TCGW060104	●	●	●	●			1	Φ3.97	1.59	2.2	0.4	


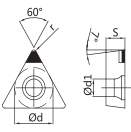
Single-tip insert

	TCGW06T102	●	●	●	●			1	Φ3.97	1.98	2.2	0.2	
	TCGW06T104	●	●	●	●			1	Φ3.97	1.98	2.2	0.4	


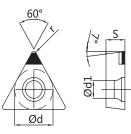
Single-tip insert

	TCGW060202	●	●	●	●			1	Φ3.97	2.38	2.2	0.2	
	TCGW060204	●	●	●	●			1	Φ3.97	2.38	2.2	0.4	

Single-tip insert

	TCGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	TCGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	TCGW080206	●	●	●	●			1	Φ4.76	2.38	2.3	0.6	

Single-tip insert

	TCGW090202	●	●	●	●			1	Φ5.56	2.38	2.5	0.2	
	TCGW090204	●	●	●	●			1	Φ5.56	2.38	2.5	0.4	
	TCGW090206	●	●	●	●			1	Φ5.56	2.38	2.5	0.6	
	TCGW090208	●	●	●	●			1	Φ5.56	2.38	2.5	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting / Grooving


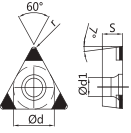

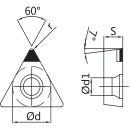

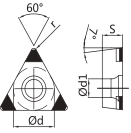

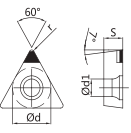

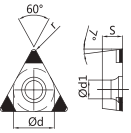
Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool

**TC** Triangular 60°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


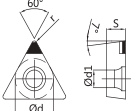

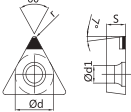

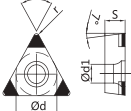

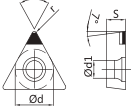
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TCBH510	TCBH520	TCCH620	TCBK100							TCBX800
Multi-tip insert												
	3-TCGW090202	●	●	●	●		3	Φ5.56	2.38	2.5	0.2	
	3-TCGW090204	●	●	●	●		3	Φ5.56	2.38	2.5	0.4	
	3-TCGW090206	●	●	●	●		3	Φ5.56	2.38	2.5	0.6	
	3-TCGW090208	●	●	●	●		3	Φ5.56	2.38	2.5	0.8	
Single-tip insert												
	TCGW110202	●	●	●	●		1	Φ6.35	2.38	2.8	0.2	
	TCGW110204	●	●	●	●		1	Φ6.35	2.38	2.8	0.4	
	TCGW110206	●	●	●	●		1	Φ6.35	2.38	2.8	0.6	
	TCGW110208	●	●	●	●		1	Φ6.35	2.38	2.8	0.8	
Multi-tip insert												
	3-TCGW110202	●	●	●	●		3	Φ6.35	2.38	2.8	0.2	
	3-TCGW110204	●	●	●	●		3	Φ6.35	2.38	2.8	0.4	
	3-TCGW110206	●	●	●	●		3	Φ6.35	2.38	2.8	0.6	
	3-TCGW110208	●	●	●	●		3	Φ6.35	2.38	2.8	0.8	
Single-tip insert												
	TCGW110302	●	●	●	●		1	Φ6.35	3.18	2.8	0.2	
	TCGW110304	●	●	●	●		1	Φ6.35	3.18	2.8	0.4	
	TCGW110306	●	●	●	●		1	Φ6.35	3.18	2.8	0.6	
	TCGW110308	●	●	●	●		1	Φ6.35	3.18	2.8	0.8	
Multi-tip insert												
	3-TCGW110302	●	●	●	●		3	Φ6.35	3.18	2.8	0.2	
	3-TCGW110304	●	●	●	●		3	Φ6.35	3.18	2.8	0.4	
	3-TCGW110306	●	●	●	●		3	Φ6.35	3.18	2.8	0.6	
	3-TCGW110308	●	●	●	●		3	Φ6.35	3.18	2.8	0.8	

**TC** Triangular 60°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●			●	●		

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	TCGW11T304	●	●	●	●			1	Φ6.35	3.97	2.8	0.4	
	TCGW11T306	●	●	●	●			1	Φ6.35	3.97	2.8	0.6	
	TCGW11T308	●	●	●	●			1	Φ6.35	3.97	2.8	0.8	
Single-tip insert													
	TCGW16T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	TCGW16T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	TCGW16T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	
	TCGW16T310	●	●	●	●			1	Φ9.525	3.97	4.4	1.0	
	TCGW16T312	●	●	●	●			1	Φ9.525	3.97	4.4	1.2	
Multi-tip insert													
	3-TCGW16T304	●	●	●	●			3	Φ9.525	3.97	4.4	0.4	
	3-TCGW16T306	●	●	●	●			3	Φ9.525	3.97	4.4	0.6	
	3-TCGW16T308	●	●	●	●			3	Φ9.525	3.97	4.4	0.8	
	3-TCGW16T310	●	●	●	●			3	Φ9.525	3.97	4.4	1.0	
	3-TCGW16T312	●	●	●	●			3	Φ9.525	3.97	4.4	1.2	
Single-tip insert													
	TCGW160404	●	●	●	●			1	Φ9.525	4.76	4.4	0.4	
	TCGW160406	●	●	●	●			1	Φ9.525	4.76	4.4	0.6	
	TCGW160408	●	●	●	●			1	Φ9.525	4.76	4.4	0.8	
	TCGW160410	●	●	●	●			1	Φ9.525	4.76	4.4	1.0	
	TCGW160412	●	●	●	●			1	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving


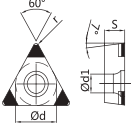
Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting , Grooving  
 Miniature Tool

**TC** Triangular 60°  
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron			●									
S	Superalloys							●	●				

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Multi-tip insert													
	3-TCGW160404	●	●	●	●			3	Φ9.525	4.76	4.4	0.4	
	3-TCGW160406	●	●	●	●			3	Φ9.525	4.76	4.4	0.6	
	3-TCGW160408	●	●	●	●			3	Φ9.525	4.76	4.4	0.8	
	3-TCGW160410	●	●	●	●			3	Φ9.525	4.76	4.4	1.0	
	3-TCGW160412	●	●	●	●			3	Φ9.525	4.76	4.4	1.2	

**TP** Triangular 60°  
Positive 11°

H	Hard Materials	●	●	●										
K	Cast Iron		●	●										
S	Superalloys				●					●	●			

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						

Single-tip insert

	TPGW080202	●	●	●	●			1	Φ4.76	2.38	2.4	0.2	
	TPGW080204	●	●	●	●			1	Φ4.76	2.38	2.4	0.4	
	TPGW080206	●	●	●	●			1	Φ4.76	2.38	2.4	0.6	

Single-tip insert

	TPGW090202	●	●	●	●			1	Φ5.56	2.38	2.8	0.2	
	TPGW090204	●	●	●	●			1	Φ5.56	2.38	2.8	0.4	
	TPGW090206	●	●	●	●			1	Φ5.56	2.38	2.8	0.6	
	TPGW090208	●	●	●	●			1	Φ5.56	2.38	2.8	0.8	

Single-tip insert

	TPGW110202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	TPGW110204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	TPGW110206	●	●	●	●			1	Φ6.35	2.38	2.8	0.6	
	TPGW110208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	

Multi-tip insert

	3-TPGW110202	●	●	●	●			3	Φ6.35	2.38	2.8	0.2	
	3-TPGW110204	●	●	●	●			3	Φ6.35	2.38	2.8	0.4	
	3-TPGW110206	●	●	●	●			3	Φ6.35	2.38	2.8	0.6	
	3-TPGW110208	●	●	●	●			3	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	TPGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	TPGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	TPGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	TPGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


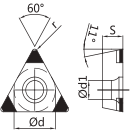
**TP** Triangular 60°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


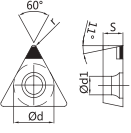
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


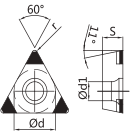
Multi-tip insert

	3-TPGW110302	●	●	●	●			3	Φ6.35	3.18	2.8	0.2	
	3-TPGW110304	●	●	●	●			3	Φ6.35	3.18	2.8	0.4	
	3-TPGW110306	●	●	●	●			3	Φ6.35	3.18	2.8	0.6	
	3-TPGW110308	●	●	●	●			3	Φ6.35	3.18	2.8	0.8	


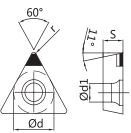
Single-tip insert

	TPGW160304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	TPGW160306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	TPGW160308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	
	TPGW160312	●	●	●	●			1	Φ9.525	3.18	4.4	1.2	


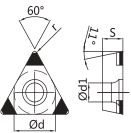
Multi-tip insert

	3-TPGW160304	●	●	●	●			3	Φ9.525	3.18	4.4	0.4	
	3-TPGW160306	●	●	●	●			3	Φ9.525	3.18	4.4	0.6	
	3-TPGW160308	●	●	●	●			3	Φ9.525	3.18	4.4	0.8	
	3-TPGW160312	●	●	●	●			3	Φ9.525	3.18	4.4	1.2	

Single-tip insert

	TPGW16T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	TPGW16T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	TPGW16T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	
	TPGW16T312	●	●	●	●			1	Φ9.525	3.97	4.4	1.2	

Multi-tip insert

	3-TPGW16T304	●	●	●	●			3	Φ9.525	3.97	4.4	0.4	
	3-TPGW16T306	●	●	●	●			3	Φ9.525	3.97	4.4	0.6	
	3-TPGW16T308	●	●	●	●			3	Φ9.525	3.97	4.4	0.8	
	3-TPGW16T312	●	●	●	●			3	Φ9.525	3.97	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool




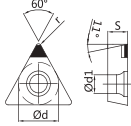
**TP** Triangular 60°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


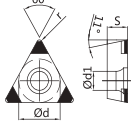
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	TPGW160402	●	●	●	●			●	●				
	TPGW160404	●	●	●	●			●	●				
	TPGW160406	●	●	●	●			●	●				
	TPGW160408	●	●	●	●			●	●				
	TPGW160412	●	●	●	●			●	●				

Multi-tip insert

	3-TPGW160402	●	●	●	●			●	●				
	3-TPGW160404	●	●	●	●			●	●				
	3-TPGW160406	●	●	●	●			●	●				
	3-TPGW160408	●	●	●	●			●	●				
	3-TPGW160412	●	●	●	●			●	●				

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


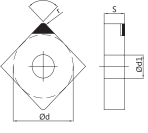
**SN** Square 90°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


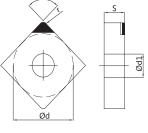
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


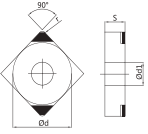
Single-tip insert

	SNGA07T204	●	●	●	●			1	Φ7.94	2.78	3.15	0.4	
	SNGA07T206	●	●	●	●			1	Φ7.94	2.78	3.15	0.6	
	SNGA07T208	●	●	●	●			1	Φ7.94	2.78	3.15	0.8	


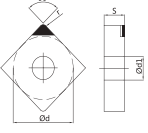
Single-tip insert

	SNGA090304	●	●	●	●			1	Φ9.525	3.18	3.8	0.4	
	SNGA090306	●	●	●	●			1	Φ9.525	3.18	3.8	0.6	
	SNGA090308	●	●	●	●			1	Φ9.525	3.18	3.8	0.8	
	SNGA090310	●	●	●	●			1	Φ9.525	3.18	3.8	1.0	
	SNGA090312	●	●	●	●			1	Φ9.525	3.18	3.8	1.2	

Multi-tip insert

	2-SNGA090304	●	●	●	●			2	Φ9.525	3.18	3.8	0.4	
	2-SNGA090306	●	●	●	●			2	Φ9.525	3.18	3.8	0.6	
	2-SNGA090308	●	●	●	●			2	Φ9.525	3.18	3.8	0.8	
	2-SNGA090310	●	●	●	●			2	Φ9.525	3.18	3.8	1.0	
	2-SNGA090312	●	●	●	●			2	Φ9.525	3.18	3.8	1.2	

Single-tip insert

	SNGA120404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	SNGA120406	●	●	●	●			1	Φ12.7	4.76	5.16	0.6	
	SNGA120408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	SNGA120410	●	●	●	●			1	Φ12.7	4.76	5.16	1.0	
	SNGA120412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


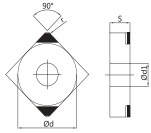
**SN** Square 90° Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●					●	●		


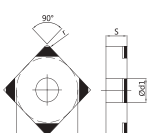
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


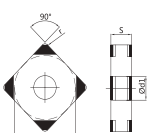
Multi-tip insert

	2-SNGA120404	●	●	●	●							
	2-SNGA120406	●	●	●	●							
	2-SNGA120408	●	●	●	●							
	2-SNGA120410	●	●	●	●							
	2-SNGA120412	●	●	●	●							


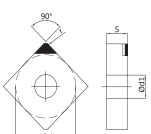
Multi-tip insert

	4-SNGA120404	●	●	●	●							
	4-SNGA120406	●	●	●	●							
	4-SNGA120408	●	●	●	●							
	4-SNGA120410	●	●	●	●							
	4-SNGA120412	●	●	●	●							
	4-SNGA120416	●	●	●	●							

Multi-tip insert

	8-SNGA120404	●	●	●	●							
	8-SNGA120406	●	●	●	●							
	8-SNGA120408	●	●	●	●							
	8-SNGA120410	●	●	●	●							
	8-SNGA120412	●	●	●	●							
	8-SNGA120416	●	●	●	●							

Single-tip insert

	SNGA150604	●	●	●	●							
	SNGA150608	●	●	●	●							
	SNGA150610	●	●	●	●							
	SNGA150612	●	●	●	●							
	SNGA150616	●	●	●	●							

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


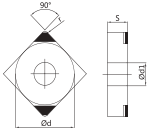
**SN** Square 90°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


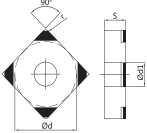
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBK800	TCBS700						


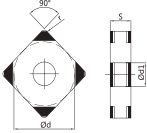
Multi-tip insert

	2-SNGA150604	●	●	●	●			2	Φ15.875	6.35	6.35	0.4	
	2-SNGA150608	●	●	●	●			2	Φ15.875	6.35	6.35	0.8	
	2-SNGA150610	●	●	●	●			2	Φ15.875	6.35	6.35	1.0	
	2-SNGA150612	●	●	●	●			2	Φ15.875	6.35	6.35	1.2	
	2-SNGA150616	●	●	●	●			2	Φ15.875	6.35	6.35	1.6	


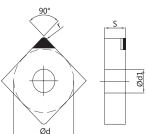
Multi-tip insert

	4-SNGA150604	●	●	●	●			4	Φ15.875	6.35	6.35	0.4	
	4-SNGA150608	●	●	●	●			4	Φ15.875	6.35	6.35	0.8	
	4-SNGA150610	●	●	●	●			4	Φ15.875	6.35	6.35	1.0	
	4-SNGA150612	●	●	●	●			4	Φ15.875	6.35	6.35	1.2	
	4-SNGA150616	●	●	●	●			4	Φ15.875	6.35	6.35	1.6	

Multi-tip insert

	8-SNGA150604	●	●	●	●			8	Φ15.875	6.35	6.35	0.4	
	8-SNGA150608	●	●	●	●			8	Φ15.875	6.35	6.35	0.8	
	8-SNGA150610	●	●	●	●			8	Φ15.875	6.35	6.35	1.0	
	8-SNGA150612	●	●	●	●			8	Φ15.875	6.35	6.35	1.2	
	8-SNGA150616	●	●	●	●			8	Φ15.875	6.35	6.35	1.6	

Single-tip insert

	SNGA190608	●	●	●	●			1	Φ19.05	6.35	7.94	0.8	
	SNGA190612	●	●	●	●			1	Φ19.05	6.35	7.94	1.2	
	SNGA190616	●	●	●	●			1	Φ19.05	6.35	7.94	1.6	

Insert  
External Toolholder  
Internal Toolholder  
PSC Toolholder  
Threading  
Parting, Grooving  
Miniature Tool


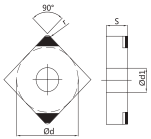
**SN** Square 90°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


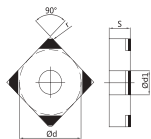
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


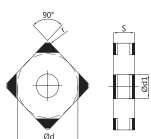
Multi-tip insert

	2-SNGA190608	●	●	●	●			2	Φ19.05	6.35	7.94	0.8	
	2-SNGA190612	●	●	●	●			2	Φ19.05	6.35	7.94	1.2	
	2-SNGA190616	●	●	●	●			2	Φ19.05	6.35	7.94	1.6	

Multi-tip insert

	4-SNGA190608	●	●	●	●			4	Φ19.05	6.35	7.94	0.8	
	4-SNGA190612	●	●	●	●			4	Φ19.05	6.35	7.94	1.2	
	4-SNGA190616	●	●	●	●			4	Φ19.05	6.35	7.94	1.6	

Multi-tip insert

	8-SNGA190608	●	●	●	●			8	Φ19.05	6.35	7.94	0.8	
	8-SNGA190612	●	●	●	●			8	Φ19.05	6.35	7.94	1.2	
	8-SNGA190616	●	●	●	●			8	Φ19.05	6.35	7.94	1.6	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


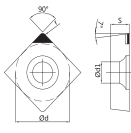
**SC** Square 90°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


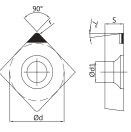
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


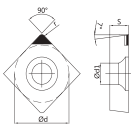
Single-tip insert

	SCGW050202	●	●	●	●			1	Φ5.56	2.38	2.2	0.2	
	SCGW050204	●	●	●	●			1	Φ5.56	2.38	2.2	0.4	


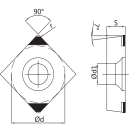
Single-tip insert

	SCGW060202	●	●	●	●			1	Φ6.35	2.38	2.2	0.2	
	SCGW060204	●	●	●	●			1	Φ6.35	2.38	2.2	0.4	
	SCGW060208	●	●	●	●			1	Φ6.35	2.38	2.2	0.8	


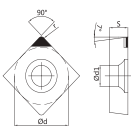
Single-tip insert

	SCGW070202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	SCGW070204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	SCGW070206	●	●	●	●			1	Φ7.94	2.38	3.4	0.6	
	SCGW070208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-SCGW070202	●	●	●	●			2	Φ7.94	2.38	3.4	0.2	
	2-SCGW070204	●	●	●	●			2	Φ7.94	2.38	3.4	0.4	
	2-SCGW070206	●	●	●	●			2	Φ7.94	2.38	3.4	0.6	
	2-SCGW070208	●	●	●	●			2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	SCGW090302	●	●	●	●			1	Φ9.525	3.18	4.4	0.2	
	SCGW090304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	SCGW090306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	SCGW090308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


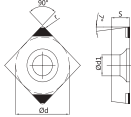
**SC** Square 90°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


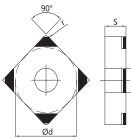
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


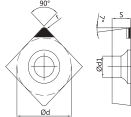
Multi-tip insert

	2-SCGW090302	●	●	●	●			●	●					
	2-SCGW090304	●	●	●	●			●	●					
	2-SCGW090306	●	●	●	●			●	●					
	2-SCGW090308	●	●	●	●			●	●					


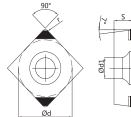
Multi-tip insert

	4-SCGW090302	●	●	●	●			●	●					
	4-SCGW090304	●	●	●	●			●	●					
	4-SCGW090306	●	●	●	●			●	●					
	4-SCGW090308	●	●	●	●			●	●					


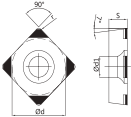
Single-tip insert

	SCGW09T302	●	●	●	●			●	●					
	SCGW09T304	●	●	●	●			●	●					
	SCGW09T306	●	●	●	●			●	●					
	SCGW09T308	●	●	●	●			●	●					

Multi-tip insert

	2-SCGW09T302	●	●	●	●			●	●					
	2-SCGW09T304	●	●	●	●			●	●					
	2-SCGW09T306	●	●	●	●			●	●					
	2-SCGW09T308	●	●	●	●			●	●					

Multi-tip insert

	4-SCGW09T302	●	●	●	●			●	●					
	4-SCGW09T304	●	●	●	●			●	●					
	4-SCGW09T306	●	●	●	●			●	●					
	4-SCGW09T308	●	●	●	●			●	●					

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting / Grooving  
 Miniature Tool


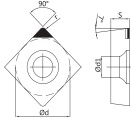
**SC** Square 90°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


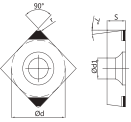
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


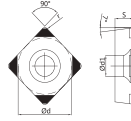
Single-tip insert

	SCGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	SCGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	SCGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	SCGW120410	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.0	
	SCGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-SCGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-SCGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-SCGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-SCGW120410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-SCGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	4-SCGW120404	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.4	
	4-SCGW120406	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.6	
	4-SCGW120408	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.8	
	4-SCGW120410	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.0	
	4-SCGW120412	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool




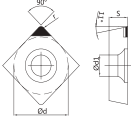
**SP** Square 90°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


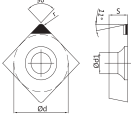
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


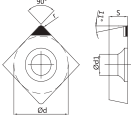
Single-tip insert

	SPGW060202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	SPGW060204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	


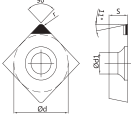
Single-tip insert

	SPGW070202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	SPGW070204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	SPGW070208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	


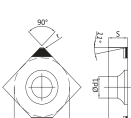
Single-tip insert

	SPGW070302	●	●	●	●			1	Φ7.94	3.18	3.4	0.2	
	SPGW070304	●	●	●	●			1	Φ7.94	3.18	3.4	0.4	
	SPGW070308	●	●	●	●			1	Φ7.94	3.18	3.4	0.8	

Single-tip insert

	SPGW090302	●	●	●	●			1	Φ9.525	3.18	3.4	0.2	
	SPGW090304	●	●	●	●			1	Φ9.525	3.18	3.4	0.4	
	SPGW090306	●	●	●	●			1	Φ9.525	3.18	3.4	0.6	
	SPGW090308	●	●	●	●			1	Φ9.525	3.18	3.4	0.8	

Multi-tip insert

	2-SPGW090302	●	●	●	●			2	Φ9.525	3.18	3.4	0.2	
	2-SPGW090304	●	●	●	●			2	Φ9.525	3.18	3.4	0.4	
	2-SPGW090306	●	●	●	●			2	Φ9.525	3.18	3.4	0.6	
	2-SPGW090308	●	●	●	●			2	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


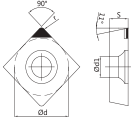
**SP** Square 90°  
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


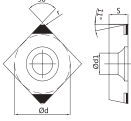
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


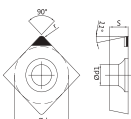
Single-tip insert

	SPGW09T304	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.4	
	SPGW09T306	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.6	
	SPGW09T308	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.8	


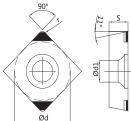
Multi-tip insert

	2-SPGW09T304	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.4	
	2-SPGW09T306	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.6	
	2-SPGW09T308	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.8	


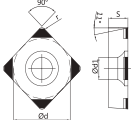
Single-tip insert

	SPGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	SPGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	SPGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	SPGW120410	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.0	
	SPGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-SPGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-SPGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-SPGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-SPGW120410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-SPGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	4-SPGW120404	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.4	
	4-SPGW120406	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.6	
	4-SPGW120408	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.8	
	4-SPGW120410	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.0	
	4-SPGW120412	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.2	

**WN** Trigon 80°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						

Single-tip insert

	WNGA06T302	●	●	●	●		1	Φ9.525	3.97	3.8	0.2	
	WNGA06T304	●	●	●	●		1	Φ9.525	3.97	3.8	0.4	
	WNGA06T306	●	●	●	●		1	Φ9.525	3.97	3.8	0.6	
	WNGA06T308	●	●	●	●		1	Φ9.525	3.97	3.8	0.8	

Single-tip insert

	WNGA060404	●	●	●	●		1	Φ9.525	4.76	3.8	0.4	
	WNGA060406	●	●	●	●		1	Φ9.525	4.76	3.8	0.6	
	WNGA060408	●	●	●	●		1	Φ9.525	4.76	3.8	0.8	

Single-tip insert

	WNGA080404	●	●	●	●		1	Φ12.7	4.76	5.16	0.4	
	WNGA080406	●	●	●	●		1	Φ12.7	4.76	5.16	0.6	
	WNGA080408	●	●	●	●		1	Φ12.7	4.76	5.16	0.8	
	WNGA080410	●	●	●	●		1	Φ12.7	4.76	5.16	1.0	
	WNGA080412	●	●	●	●		1	Φ12.7	4.76	5.16	1.2	

Multi-tip insert

	3-WNGA080404	●	●	●	●		3	Φ12.7	4.76	5.16	0.4	
	3-WNGA080406	●	●	●	●		3	Φ12.7	4.76	5.16	0.6	
	3-WNGA080408	●	●	●	●		3	Φ12.7	4.76	5.16	0.8	
	3-WNGA080410	●	●	●	●		3	Φ12.7	4.76	5.16	1.0	
	3-WNGA080412	●	●	●	●		3	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool

Insert


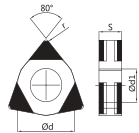
**WN** Trigon 80°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCC H620	TCBK100	TCBK800	TCBS700						

Multi-tip insert

	6-WNGA080404	●	●	●	●			●	●	6	Φ12.7	4.76	5.16	0.4	
	6-WNGA080406	●	●	●	●			●	●	6	Φ12.7	4.76	5.16	0.6	
	6-WNGA080408	●	●	●	●			●	●	6	Φ12.7	4.76	5.16	0.8	
	6-WNGA080410	●	●	●	●			●	●	6	Φ12.7	4.76	5.16	1.0	
	6-WNGA080412	●	●	●	●			●	●	6	Φ12.7	4.76	5.16	1.2	

External Toolholder


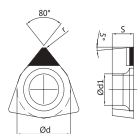
Internal Toolholder

**WB** Trigon 80°  
Positive 5°

H	Hard Materials	●	●	●							
K	Cast Iron				●						
S	Superalloys							●	●		

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCC H620	TCBK100	TCBK800	TCBS700						


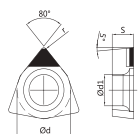
Single-tip insert

	WBGW060102	●	●	●	●			●	●	1	Φ3.97	1.59	2.2	0.2	
	WBGW060104	●	●	●	●			●	●	1	Φ3.97	1.59	2.2	0.4	

Threading

Parting , Grooving

Single-tip insert

	WBGW080202	●	●	●	●			●	●	1	Φ4.76	2.38	2.4	0.2	
	WBGW080204	●	●	●	●			●	●	1	Φ4.76	2.38	2.4	0.4	


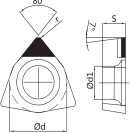
Miniature Tool

**WC** Trigon 80°  
Positive 7°


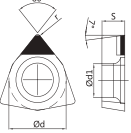
H	Hard Materials	●	●	●									
K	Cast Iron				●								
S	Superalloys							●	●				

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


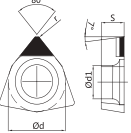
Single-tip insert

	WCGW020102	●	●	●	●			1	Φ3.97	1.59	2.3	0.2	
	WCGW020104	●	●	●	●			1	Φ3.97	1.59	2.3	0.4	


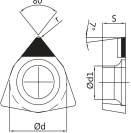
Single-tip insert

	WCGW040202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	WCGW040204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	

Single-tip insert

	WCGW050302	●	●	●	●			1	Φ7.94	3.18	3.5	0.2	
	WCGW050304	●	●	●	●			1	Φ7.94	3.18	3.5	0.4	
	WCGW050308	●	●	●	●			1	Φ7.94	3.18	3.5	0.8	

Single-tip insert

	WCGW06T302	●	●	●	●			1	Φ9.525	3.97	4.4	0.2	
	WCGW06T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	WCGW06T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	


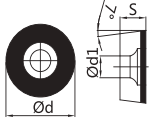
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool

**RC** Round Positive 7°


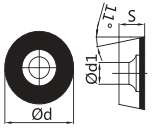
H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys							●	●	

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	RCGW060200	●	●	●	●			—	Φ6	2.38	2.8	—	
	RCGW080300	●	●	●	●			—	Φ8	3.18	3.4	—	
	RCGW100300	●	●	●	●			—	Φ10	3.18	3.6	—	
	RCGW120400	●	●	●	●			—	Φ12	4.76	4.2	—	
	RCGW160600	●	●	●	●			—	Φ16	6.35	5.2	—	

**RP** Round Positive 11°

H	Hard Materials	●	●	●						
K	Cast Iron				●					
S	Superalloys							●	●	

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	RPGW080300	●	●	●	●			—	Φ8	3.18	3.4	—	
	RPGW100400	●	●	●	●			—	Φ10	4.72	3.6	—	
	RPGW120400	●	●	●	●			—	Φ12	4.72	4.2	—	
	RPGW160400	●	●	●	●			—	Φ16	4.72	5.2	—	


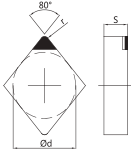
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			


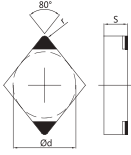
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


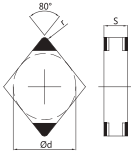
Single-tip insert

	CNGN120404	●	●	●	●			1	Φ12.7	4.76	—	0.4	
	CNGN120408	●	●	●	●			1	Φ12.7	4.76	—	0.8	
	CNGN120412	●	●	●	●			1	Φ12.7	4.76	—	1.2	

Multi-tip insert

	2-CNGN120404	●	●	●	●			2	Φ12.7	4.76	—	0.4	
	2-CNGN120408	●	●	●	●			2	Φ12.7	4.76	—	0.8	
	2-CNGN120412	●	●	●	●			2	Φ12.7	4.76	—	1.2	

Multi-tip insert

	4-CNGN120404	●	●	●	●			4	Φ12.7	4.76	—	0.4	
	4-CNGN120408	●	●	●	●			4	Φ12.7	4.76	—	0.8	
	4-CNGN120412	●	●	●	●			4	Φ12.7	4.76	—	1.2	


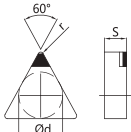

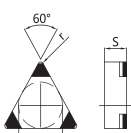

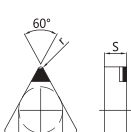

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert  
External Toolholder  
Internal Toolholder  
PSC Toolholder  
Threading  
Parting, Grooving  
Miniature Tool

**TN** Triangular 60° Negative

H	Hard Materials	●	●	●											
K	Cast Iron		●	●											
S	Superalloys				●						●	●			

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	TNGN110302	●	●	●	●			1	Φ6.35	3.18	—	0.2	
	TNGN110304	●	●	●	●			1	Φ6.35	3.18	—	0.4	
	TNGN110306	●	●	●	●			1	Φ6.35	3.18	—	0.6	
Single-tip insert													
	TNGN160304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	TNGN160308	●	●	●	●			1	Φ9.525	3.18	—	0.8	
	TNGN160312	●	●	●	●			1	Φ9.525	3.18	—	1.2	
Multi-tip insert													
	3-TNGN160304	●	●	●	●			3	Φ9.525	3.18	—	0.4	
	3-TNGN160308	●	●	●	●			3	Φ9.525	3.18	—	0.8	
	3-TNGN160312	●	●	●	●			3	Φ9.525	3.18	—	1.2	
Single-tip insert													
	TNGN160404	●	●	●	●			1	Φ9.525	4.76	—	0.4	
	TNGN160408	●	●	●	●			1	Φ9.525	4.76	—	0.8	
	TNGN160412	●	●	●	●			1	Φ9.525	4.76	—	1.2	
	TNGN160416	●	●	●	●			1	Φ9.525	4.76	—	1.6	
Multi-tip insert													
	3-TNGN160404	●	●	●	●			3	Φ9.525	4.76	—	0.4	
	3-TNGN160408	●	●	●	●			3	Φ9.525	4.76	—	0.8	
	3-TNGN160412	●	●	●	●			3	Φ9.525	4.76	—	1.2	
	3-TNGN160416	●	●	●	●			3	Φ9.525	4.76	—	1.6	




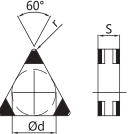
**TN** Triangular 60° Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●								

● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	6-TNGN160404	●	●	●	●			●	●				
	6-TNGN160408	●	●	●	●			●	●				
	6-TNGN160412	●	●	●	●			●	●				
	6-TNGN160416	●	●	●	●			●	●				

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert  
External Toolholder  
Internal Toolholder  
PSC Toolholder  
Threading  
Parting, Grooving  
Miniature Tool

**TP** Triangular 60°  
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	TPGN090202	●	●	●	●			1	Φ5.56	2.38	—	0.2	
	TPGN090204	●	●	●	●			1	Φ5.56	2.38	—	0.4	
	TPGN090208	●	●	●	●			1	Φ5.56	2.38	—	0.8	

Single-tip insert

	TPGN110302	●	●	●	●			1	Φ6.35	3.18	—	0.2	
	TPGN110304	●	●	●	●			1	Φ6.35	3.18	—	0.4	
	TPGN110308	●	●	●	●			1	Φ6.35	3.18	—	0.8	

Single-tip insert

	TPGN160304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	TPGN160308	●	●	●	●			1	Φ9.525	3.18	—	0.8	
	TPGN160312	●	●	●	●			1	Φ9.525	3.18	—	1.2	

Multi-tip insert

	3-TPGN160304	●	●	●	●			3	Φ9.525	3.18	—	0.4	
	3-TPGN160308	●	●	●	●			3	Φ9.525	3.18	—	0.8	
	3-TPGN160312	●	●	●	●			3	Φ9.525	3.18	—	1.2	

Single-tip insert

	TPGN160404	●	●	●	●			1	Φ9.525	4.76	—	0.4	
	TPGN160408	●	●	●	●			1	Φ9.525	4.76	—	0.8	
	TPGN160412	●	●	●	●			1	Φ9.525	4.76	—	1.2	
	TPGN160416	●	●	●	●			1	Φ9.525	4.76	—	1.6	


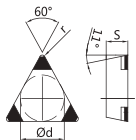
**TP** Triangular 60°  
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			


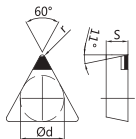
● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


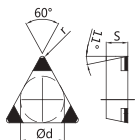
Multi-tip insert

	3-TPGN160404	●	●	●	●			●	●		—	0.4	
	3-TPGN160408	●	●	●	●			●	●		—	0.8	
	3-TPGN160412	●	●	●	●			●	●		—	1.2	
	3-TPGN160416	●	●	●	●			●	●		—	1.6	

Single-tip insert

	TPGN220408	●	●	●	●			●	●		—	0.8	
	TPGN220412	●	●	●	●			●	●		—	1.2	
	TPGN220416	●	●	●	●			●	●		—	1.6	

Multi-tip insert

	3-TPGN220408	●	●	●	●			●	●		—	0.8	
	3-TPGN220412	●	●	●	●			●	●		—	1.2	
	3-TPGN220416	●	●	●	●			●	●		—	1.6	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


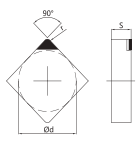
**SN** Square 90° Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


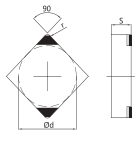
● : Continuous Cutting   ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


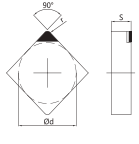
Single-tip insert

	SNGN090302	●	●	●	●			1	Φ9.525	3.18	—	0.2	
	SNGN090304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	SNGN090308	●	●	●	●			1	Φ9.525	3.18	—	0.8	


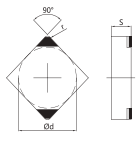
Multi-tip insert

	2-SNGN090302	●	●	●	●			2	Φ9.525	3.18	—	0.2	
	2-SNGN090304	●	●	●	●			2	Φ9.525	3.18	—	0.4	
	2-SNGN090308	●	●	●	●			2	Φ9.525	3.18	—	0.8	


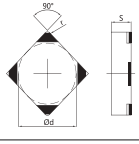
Single-tip insert

	SNGN120404	●	●	●	●			1	Φ12.7	4.76	—	0.4	
	SNGN120408	●	●	●	●			1	Φ12.7	4.76	—	0.8	
	SNGN120412	●	●	●	●			1	Φ12.7	4.76	—	1.2	


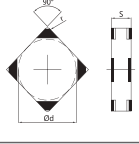
Multi-tip insert

	2-SNGN120404	●	●	●	●			2	Φ12.7	4.76	—	0.4	
	2-SNGN120408	●	●	●	●			2	Φ12.7	4.76	—	0.8	
	2-SNGN120412	●	●	●	●			2	Φ12.7	4.76	—	1.2	

Multi-tip insert

	4-SNGN120404	●	●	●	●			4	Φ12.7	4.76	—	0.4	
	4-SNGN120408	●	●	●	●			4	Φ12.7	4.76	—	0.8	
	4-SNGN120412	●	●	●	●			4	Φ12.7	4.76	—	1.2	

Multi-tip insert

	8-SNGN120404	●	●	●	●			8	Φ12.7	4.76	—	0.4	
	8-SNGN120408	●	●	●	●			8	Φ12.7	4.76	—	0.8	
	8-SNGN120412	●	●	●	●			8	Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

## Solid type

- Monolithic sintering structure, no strength and internal stress defects caused by welding.
- Suitable for rough machining occasions with large cutting depth and heavy cutting.



## Strong welding type

- Ultra high welding strength is suitable for harsh cutting environment with long life and safety requirements.



## Material Introduction

	Grade	Work Material	Features	Application
Uncoated	TBN7000	Hardened Steel Hardened Cast Iron	Excellent overall performance with universal application. Excellent wear resistance.	Semi-Finishing Finishing
	TBN9500 H	Hardened Steel	Exhibiting wear and fracture resistance in cutting of hardened steel.	Finishing
	TBS7000	Hardened Steel Hardened Cast Iron	Excellent overall performance with universal application. Excellent wear resistance.	Finishing
	TBN7200	K Grey Cast Iron	Exhibiting improved wear and fracture resistance in cutting of Grey Cast Iron.	Heavy cutting
	TBS7200			Finishing
	TBN3500 S	High Nickel Chrome High Hardness Alloy Cast Iron High Manganese Steel	Excellent impact resistance and wear resistance.	Heavy cutting

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting Grooving

Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool


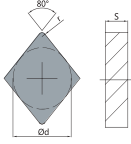

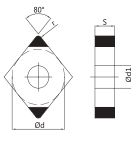
**CN** Rhombic 80°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


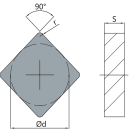

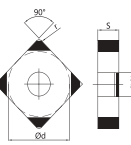
	CNMN120404	●	●	●	●	●	●	4	Φ12.7	4.76	—	0.4	
	CNMN120408	●	●	●	●	●	●	4	Φ12.7	4.76	—	0.8	
	CNMN120412	●	●	●	●	●	●	4	Φ12.7	4.76	—	1.2	
	CNGA120404-4T			●	●	●	●	4	Φ12.7	4.76	5.16	0.4	
	CNGA120408-4T			●	●	●	●	4	Φ12.7	4.76	5.16	0.8	
	CNGA120412-4T			●	●	●	●	4	Φ12.7	4.76	5.16	1.2	
	CNGA160404-4T			●	●	●	●	4	Φ15.875	6.35	6.35	0.4	
	CNGA160408-4T			●	●	●	●	4	Φ15.875	6.35	6.35	0.8	
	CNGA160412-4T			●	●	●	●	4	Φ15.875	6.35	6.35	1.2	

**SN** Square 90°  
Negative

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	SNMN090304	●	●	●	●	●	●	8	Φ9.525	3.18	—	0.4	
	SNMN090308	●	●	●	●	●	●	8	Φ9.525	3.18	—	0.8	
	SNMN090312	●	●	●	●	●	●	8	Φ9.525	3.18	—	1.2	
	SNMN120404	●	●	●	●	●	●	8	Φ12.7	4.76	—	0.4	
	SNMN120408	●	●	●	●	●	●	8	Φ12.7	4.76	—	0.8	
	SNGA120404-8T			●	●	●	●	8	Φ12.7	4.76	5.16	0.4	
	SNGA120408-8T			●	●	●	●	8	Φ12.7	4.76	5.16	0.8	
	SNGA120412-8T			●	●	●	●	8	Φ12.7	4.76	5.16	1.2	


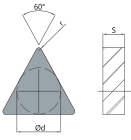

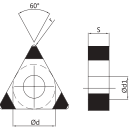
**TN** Triangular 60° Negative

H	Hard Materials	●	●	●									
K	Cast Iron				●	●							
S	Superalloys						●						

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


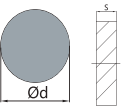
	TNGN110304	●	●		●	●			6	Φ6.35	3.18	—	0.4	
	TNGN110308	●	●		●	●			6	Φ6.35	3.18	—	0.8	
	TNGN110312	●	●		●	●			6	Φ6.35	3.18	—	1.2	
	TNGN160404		●		●	●			6	Φ9.525	4.76	—	0.4	
	TNGN160408		●		●	●			6	Φ9.525	4.76	—	0.8	
	TNGN160412		●		●	●			6	Φ9.525	4.76	—	1.2	
	TNGA160404-6T			●	●				6	Φ9.525	4.76	3.8	0.4	
	TNGA160408-6T			●	●				6	Φ9.525	4.76	3.8	0.8	
	TNGA160412-6T			●	●				6	Φ9.525	4.76	3.8	1.2	

**RN** Round Negative

H	Hard Materials	●	●	●									
K	Cast Iron				●	●							
S	Superalloys						●						

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	RNMN090300	●	●		●	●			—	Φ9.525	3.18	—	—	
	RNMN120400	●	●		●	●			—	Φ12.7	4.76	—	—	
	RNGN090300	●	●		●	●			—	Φ9.525	3.18	—	—	
	RNGN120400	●	●		●	●			—	Φ12.7	4.76	—	—	

Insert

External Toolholder

Internal Toolholder


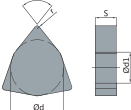

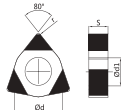
PSC Toolholder


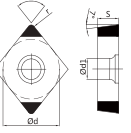
Threading

Parting / Grooving

Miniature Tool

Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool

Insert shape		No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						
<b>WN</b> Trigon 80° Negative													
H Hard Materials		●	●	●									
K Cast Iron					●	●							
S Superalloys							●						
● : Continuous Cutting    ● : Light Interrupted Cutting													
Multi-tip insert													
	WNMN080404	●	●		●	●		6	Φ12.7	4.76	—	0.4	
	WNMN080408	●	●		●	●		6	Φ12.7	4.76	—	0.8	
	WNMN080412	●	●		●	●		6	Φ12.7	4.76	—	1.2	
	WNGA080404-6T			●	●	●		6	Φ12.7	4.76	5.16	0.4	
	WNGA080408-6T			●	●	●		6	Φ12.7	4.76	5.16	0.8	
	WNGA080412-6T			●	●	●		6	Φ12.7	4.76	5.16	1.2	

Insert shape		No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						
<b>CC</b> Rhombic 80° Positive 7°													
H Hard Materials		●	●	●									
K Cast Iron					●	●							
S Superalloys							●						
Multi-tip insert													
	CCGW09T304-2T			●	●	●		2	Φ9.525	3.97	4.4	0.4	
	CCGW09T308-2T			●	●	●		2	Φ9.525	3.97	4.4	0.8	
	CCGW09T312-2T			●	●	●		2	Φ9.525	3.97	4.4	1.2	
	CCGW120404-2T			●	●	●		2	Φ12.7	4.76	5.5	0.4	
	CCGW120408-2T			●	●	●		2	Φ12.7	4.76	5.5	0.8	
	CCGW120412-2T			●	●	●		2	Φ12.7	4.76	5.5	1.2	




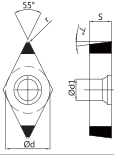
**DC** Rhombic 55°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

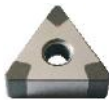
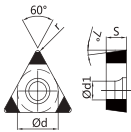
	DCGW11T304-2T			●	●				2	Φ9.525	3.97	4.4	0.4	
	DCGW11T308-2T			●	●				2	Φ9.525	3.97	4.4	0.8	
	DCGW11T312-2T			●	●				2	Φ9.525	3.97	4.4	1.2	

**TC** Triangular 60°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	TCGW110304-3T			●	●				3	Φ6.35	3.18	2.8	0.4	
	TCGW110308-3T			●	●				3	Φ6.35	3.18	2.8	0.8	
	TCGW110312-3T			●	●				3	Φ6.35	3.18	2.8	1.2	



Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool


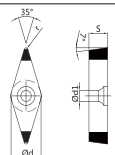
**VB** Rhombic 35°  
Positive 5°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

● : Continuous Cutting    ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


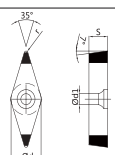
	VBGW160404-2T			●	●				2	Φ9.525	4.76	4.4	0.4	
	VBGW160408-2T			●	●				2	Φ9.525	4.76	4.4	0.8	
	VBGW160412-2T			●	●				2	Φ9.525	4.76	4.4	1.2	

**VC** Rhombic 35°  
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				


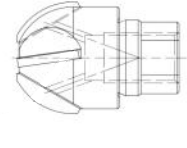
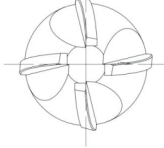

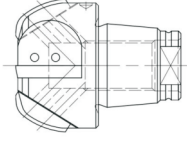
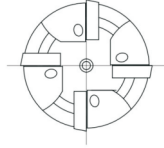

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	VCGW160404-2T			●	●				2	Φ9.525	4.76	4.4	0.4	
	VCGW160408-2T			●	●				2	Φ9.525	4.76	4.4	0.8	
	VCGW160412-2T			●	●				2	Φ9.525	4.76	4.4	1.2	

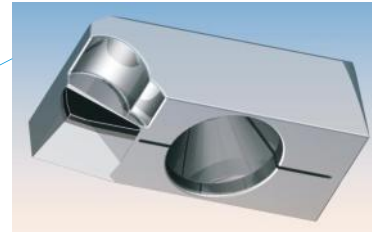
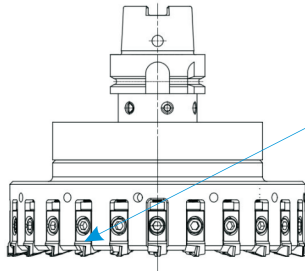
**CBN ballnose tool**

CV joint machining tool introduction

 <p>Straight connection</p> <p>Taper connection</p>	Straight shank	No air coolant hole	Maching position: Ball track
			
	RTS shank	Air coolant hole	
			

**Auto parts face milling**

Milling cutter and cartridge



- App : Face milling
- Feature : Cartridge can be adjusted.

**Non standard scheme design**

Cylinder block cutting tool

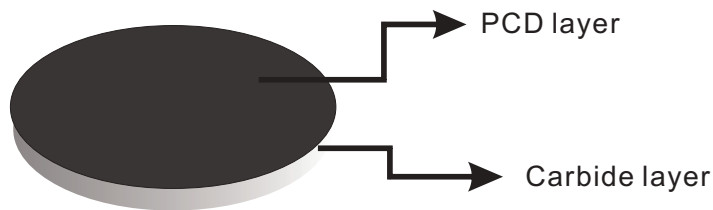


Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

## Polycrystalline Diamond (PCD)

TOTIME diamond material is a synthetic diamond sintered under high temperatures and pressures. PCD (Polycrystalline diamond) is ideal for non-ferrous metals and non-metals.

- Applicable for non-ferrous metals, non-metals turning, milling and other various type of cutting.
- Long tool life due to extreme hardness.
- Capable of high cutting speeds which increases cutting productivity.
- Reduced edge build-up allows for high precision cutting.
- Diversified applications for cutting of non-ferrous materials and non-metals.



### Recommended Grades

Grade	Grain Size (μm)	Transverse Rupture Strength (Gpa)	Work Material	Features
TDC2000	6	1.7	CFPR Composite Materials	Special blade design, excellent wear resistance.
TDA1000	10	1.4	Medium and Low Si Aluminum Alloy Si<13%	Demonstrates optimum wear and fracture resistance and excellent edge sharpness.
TDA1500	25	1.2	High Si Aluminum Alloy Si>13%	Exhibiting wear and fracture resistance in cutting of aluminum alloy.

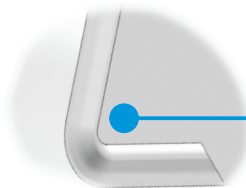
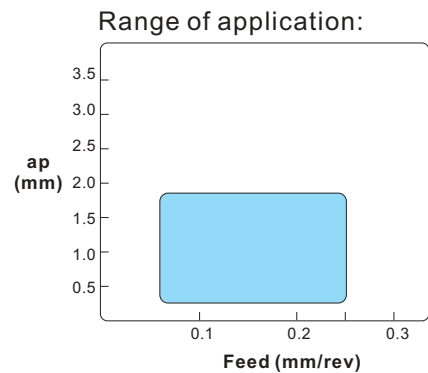
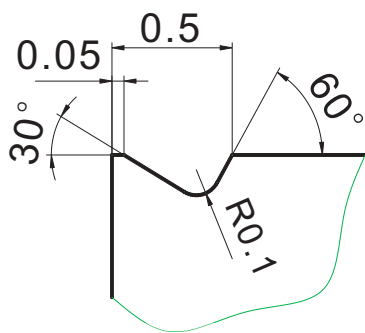
### Cutting conditions

Work Material	Grade	Cutting Condition		
		Vc (m/min)	f (mm/rev)	ap(mm)
Medium and Low Si Aluminum Alloy Si<13%	TDA1000	900-3000	0.1-0.4	0.1-0.4
High Si Aluminum Alloy Si>13%	TDA1500	300-700	0.1-0.4	0.1-0.4
Carbon Fiber	TDC2000	200-1500	0.05-0.3	0.1-3.0

# PCD Chipbreaker

- Provides excellent chip control in medium finishing and finishing of aluminium alloy.
- Solves chip control problems and dramatically improves work efficiency.
- Achieves long, stable tool life by employing high-toughness grade.

## FF Chipbreaker FF Rough/semi-finish slot type

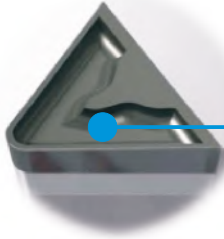
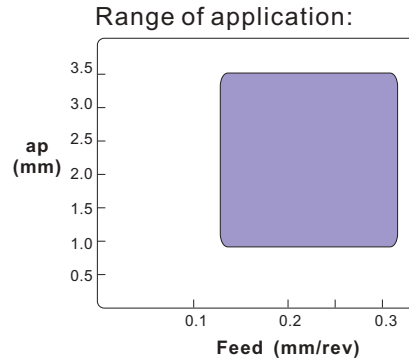
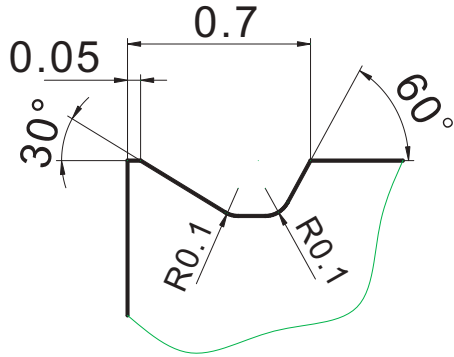


Finely breaks chips in machining cast materials

<p>Machining Details: Internal Boring of Transmission Components</p>		<p>Without chip slot</p>
		<p>With chip slot</p>
<p>Work Material :A6061                  Tool No. :2-VCMT110302-FF                  Cutting Conditions :Vc=200m/min, f=0.20mm/rev                  ap=0.10mm Wet</p>		

- Insert
- External Toolholder
- Internal Toolholder
- PSC Toolholder
- Threading
- Parting, Grooving
- Miniature Tool

**KF Chipbreaker** KF Rough/semi-finish chip slot type



Provides good chip control at shallow depths of cut for wrought materials.

Machining Details: Internal Boring of Machine Components		Without chip slot
		<p>With chip slot</p>
Work Material	:ADC12	
Tool No.	:4-TPMT110304-KF	
Cutting Conditions	:Vc=400m/min, f=0.23mm/rev ap=1.20mm Wet	

★ Customer can choose according to exact demand

# Single Crystal Diamond

Single crystal diamond is considered to be the most ideal tool material for ultra-precision machining, and the tools made have extremely high hardness and wear resistance. Low friction coefficient and high elastic modulus. High thermal conductivity, low thermal expansion coefficient and low affinity with non-ferrous metals. However, the characteristics of materials are also doomed to high experimental cost, high processing difficulty and small processing space.

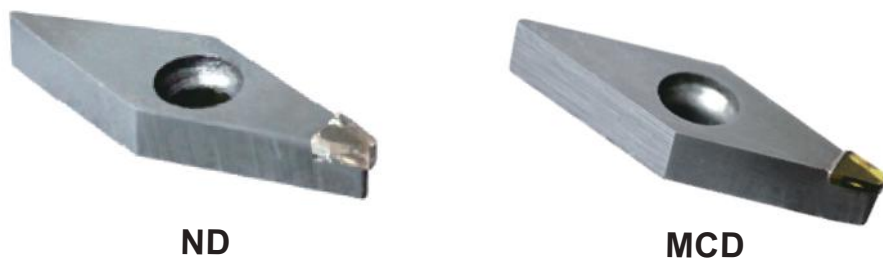
## Classification



Natural Diamond (ND)

Synthetic Diamond (MCD)

## Standard inserts



ND

MCD

The precision of blade contour can reach 5 μm;  
 More sharp edge and longer service life;  
 Adopt ISO international standards;  
 Mainly including C-type, D-type, V-type, and other series of standard inserts.

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

# Single Crystal Diamond

The company has launched diversified diamond single crystal ultra precision machining tool systems, widely used in ultra precision turning, milling, drilling, and nano high polishing table, surface processing. At the same time, the cutting tools can be developed and customized according to the processing needs of customers.

## ● Milling cutter



- The sharp edge ensures the good quality of the machined surface;
- More excellent wear resistance and longer service life;
- It is suitable for side milling, slot milling, contour milling and spiral interpolation milling of precision parts;
- Specification diameter:  $\varnothing 3$ - $\varnothing 20$

## ● Dresser



- Single / multiple natural diamond finishing tools are used;
- Suitable for all kinds of cylindrical grinding machines, centerless grinding machines, surface grinding machines and special grinding wheels;
- Stable quality, complete specifications and convenient use;
- Longer life and durability.


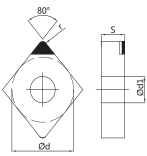

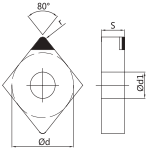

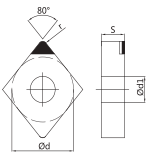
## ● Non-standard tool



- The precision of fine grinding edge contour can reach  $5 \mu m$ ;
- Finish grinding the edge contour according to the forming size of the workpiece, and complete the high-precision shape machining at one time.



**CN** Rhombic 80°  
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CNGA090302	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.2	
	CNGA090304	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.4	
	CNGA090306	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.6	
	CNGA090308	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.8	
	CNGA09T302	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.2	
	CNGA09T304	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.4	
	CNGA09T306	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.6	
	CNGA09T308	●	●	●	●	●	—	Φ9.525	9.97	3.81	0.8	
	CNGA120402	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.2	
	CNGA120404	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.4	
	CNGA120408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8	
	CNGA120412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


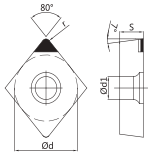

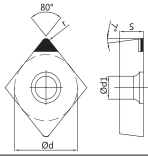

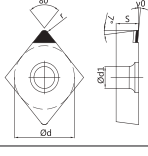

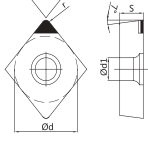

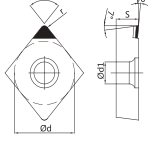

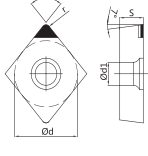

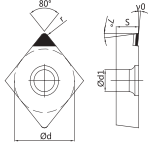
Threading

Parting, Grooving


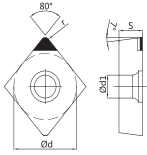

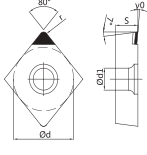

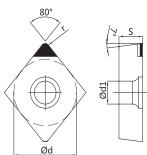

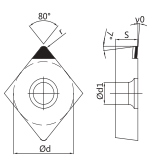
Miniature Tool

**CC** Rhombic 80°  
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CCMW03S102	●	●	●	●	●	—	Φ3.57	1.39	2	0.2	
	CCMW03S104	●	●	●	●	●	—	Φ3.57	1.39	2	0.4	
	CCMW04T002	●	●	●	●	●	—	Φ4.37	1.79	2	0.2	
	CCMW04T004	●	●	●	●	●	—	Φ4.37	1.79	2	0.4	
	CCGW050202	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.2	
	CCGW050204	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.4	
	CCGW050206	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.6	
	CCGT050202	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.2	
	CCGT050204	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.4	
	CCGT050206	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.6	
	CCGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	CCGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	CCGW060206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	CCGW060208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	CCGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	CCGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	CCGT060206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	CCGT060208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	CCMW080202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	CCMW080204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	CCMW080206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	CCMW080208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	CCMT080202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	CCMT080204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	CCMT080206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	CCMT080208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	

**CC** Rhombic 80°  
Positive 7°

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CCGW09T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	CCGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	CCGW09T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	CCGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	CCGT09T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	CCGT09T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	CCGT09T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	CCGT09T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	CCGW120402	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.2	
	CCGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	CCGW120406	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.6	
	CCGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	CCGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	CCGT120402	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.2	
	CCGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	CCGT120406	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.6	
	CCGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	CCGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


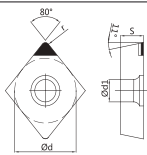

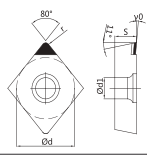

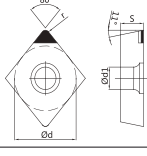

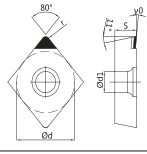

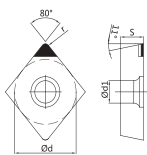

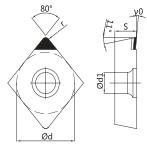

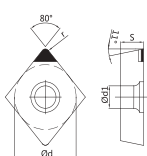
Threading

Parting / Grooving


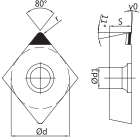


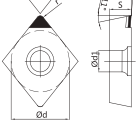

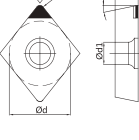

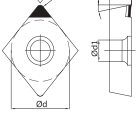
Miniature Tool

**CP** Rhombic 80°  
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CPGW050202	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.2	
	CPGW050204	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.4	
	CPGW050206	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.6	
	CPGT050202	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.2	
	CPGT050204	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.4	
	CPGT050206	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.6	
	CPGW060202	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.2	
	CPGW060204	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.4	
	CPGW060208	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.8	
	CPGT060202	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.2	
	CPGT060204	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.4	
	CPGT060208	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.8	
	CPGW080202	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.2	
	CPGW080204	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.4	
	CPGW080206	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.6	
	CPGW080208	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.8	
	CPGT080202	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.2	
	CPGT080204	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.4	
	CPGT080206	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.6	
	CPGT080208	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.8	
	CPGW090302	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.2	
	CPGW090304	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.4	
	CPGW090306	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.6	
	CPGW090308	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.8	

**CP** Rhombic 80°  
Positive 11°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CPGT090302	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.2	
	CPGT090304	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.4	
	CPGT090306	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.6	
	CPGT090308	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.8	
	CPGW09T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	CPGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	CPGW09T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	CPGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	CPGT09T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	CPGT09T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	CPGT09T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	CPGT09T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	CPGW120402	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.2	
	CPGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	CPGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	CPGW120410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	CPGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	CPGT120402	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.2	
	CPGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	CPGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	CPGT120410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	CPGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

Insert

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External Toolholder

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Internal Toolholder

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PSC Toolholder

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Threading

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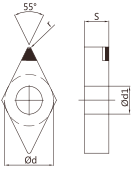

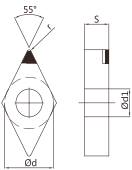

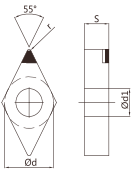
Parting, Grooving

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Miniature Tool

**DN** Rhombic 55°  
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DNGA110402	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.2	
	DNGA110404	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.4	
	DNGA110406	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.6	
	DNGA110408	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.8	
	DNGA150402	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.2	
	DNGA150404	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.4	
	DNGA150408	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.8	
	DNGA150410	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.0	
	DNGA150412	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.2	
	DNGA150604	●	●	●	●	●		—	Φ12.7	6.35	5.16	0.4	
	DNGA150608	●	●	●	●	●		—	Φ12.7	6.35	5.16	0.8	
	DNGA150610	●	●	●	●	●		—	Φ12.7	6.35	5.16	1.0	
	DNGA150612	●	●	●	●	●		—	Φ12.7	6.35	5.16	1.2	

**DC** Rhombic 55°  
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	DCGW070202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	DCGW070204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	DCGW070206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	DCGW070208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	DCGT070202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	DCGT070204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	DCGT070206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	DCGT070208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	DCGW090202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	DCGW090204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	DCGW090206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	DCGW090208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	DCGT090202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	DCGT090204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	DCGT090206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	DCGT090208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	DCGW110302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	DCGW110304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	DCGW110308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	DCGT110302	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.2	
	DCGT110304	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.4	
	DCGT110308	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.8	
	DCGW11T302	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.2	
	DCGW11T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	DCGW11T306	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.6	
	DCGW11T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


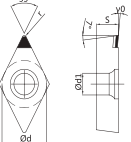

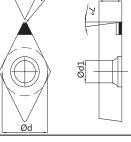

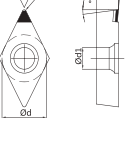

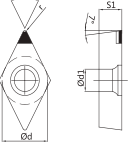

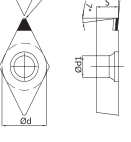
Threading

Parting / Grooving

Miniature Tool

**DC** Rhombic 55°  
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DCGT11T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	DCGT11T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	DCGT11T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	DCGT11T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	DCGW110402	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.2	
	DCGW110404	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.4	
	DCGW110406	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.6	
	DCGT110402	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.2	
	DCGT110404	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.4	
	DCGT110406	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.6	
	DCGT110408	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.8	
	DCGW150404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	DCGW150406	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.6	
	DCGW150408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	DCGW150410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	DCGW150412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	DCGW150416	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.6	
	DCGT150404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	DCGT150406	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.6	
	DCGT150408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	DCGT150410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	DCGT150412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	
	DCGT150416	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.6	



**DP** Rhombic 55°  
Positive 11°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	DPGW070202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	DPGW070204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	DPGW070206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	DPGW070208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	DPGT070202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	DPGT070204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	DPGT070206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	DPGT070208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	DPGW090202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	DPGW090204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	DPGW090206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	DPGW090208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	DPGT090202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	DPGT090204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	DPGT090206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	DPGT090208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	DPGW110302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	DPGW110304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	DPGW110306	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.6	
	DPGW110308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	DPGT110302	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.2	
	DPGT110304	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.4	
	DPGT110306	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.6	
	DPGT110308	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


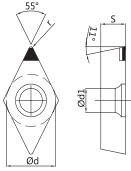

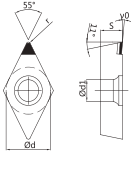

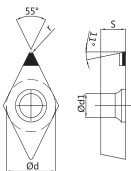

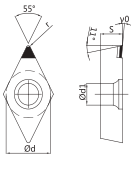

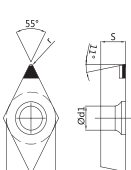

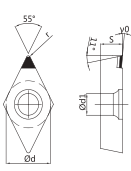
Threading

Parting, Grooving


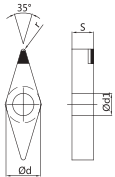
Miniature Tool

**DP** Rhombic 55°  
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DPGW11T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	DPGW11T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	DPGW11T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	DPGW11T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	DPGT11T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	DPGT11T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	DPGT11T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	DPGT11T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	DPGW110402	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.2	
	DPGW110404	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.4	
	DPGW110406	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.6	
	DPGW110408	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.8	
	DPGT110402	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.2	
	DPGT110404	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.4	
	DPGT110406	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.6	
	DPGT110408	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.8	
	DPGW150404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	DPGW150406	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.6	
	DPGW150408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	DPGW150410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	DPGW150412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	DPGT150404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	DPGT150406	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.6	
	DPGT150408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	DPGT150410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	DPGT150412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	


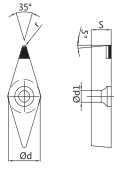

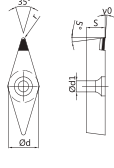

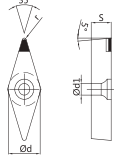

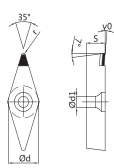
**VN** Rhombic 35°  
Negative

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VNGA160402	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.2	
	VNGA160404	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.4	
	VNGA160408	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.8	
	VNGA160410	●	●	●	●	●		—	Φ9.525	4.76	3.8	1.0	
	VNGA160412	●	●	●	●	●		—	Φ9.525	4.76	3.8	1.2	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

**VB** Rhombic 35°  
Positive 5°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle ( $\gamma_0$ )	Inscribed circle ( $\Phi d$ )	Thickness (s)	Inner hole diameter ( $\Phi d1$ )	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VBGW110302	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.2		
	VBGW110304	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.4		
	VBGW110306	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.6		
	VBGW110308	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.8		
	VBGT110302	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.2		
	VBGT110304	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.4		
	VBGT110306	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.6		
	VBGT110308	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.8		
	VBGW160404	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.4		
	VBGW160406	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.6		
	VBGW160408	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.8		
	VBGW160410	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.0		
	VBGW160412	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.2		
	VBGT160404	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.4		
	VBGT160406	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.6		
	VBGT160408	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.8		
	VBGT160410	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.0		
	VBGT160412	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.2		

**VC** Rhombic 35°  
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	VCGW080202	●	●	●	●	●	—	Φ4.76	2.38	2.3	0.2	
	VCGW080204	●	●	●	●	●	—	Φ4.76	2.38	2.3	0.4	
	VCGW080208	●	●	●	●	●	—	Φ4.76	2.38	2.3	0.8	
	VCGT080202	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.3	0.2	
	VCGT080204	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.3	0.4	
	VCGT080208	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.3	0.8	
	VCGW110302	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.2	
	VCGW110304	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.4	
	VCGW110308	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.8	
	VCGT110302	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.2	
	VCGT110304	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.4	
	VCGT110308	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.8	
	VCGW160404	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.4	
	VCGW160408	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.8	
	VCGW160410	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.0	
	VCGW160412	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.2	
	VCGT160404	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.4	
	VCGT160408	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.8	
	VCGT160410	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.0	
	VCGT160412	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving


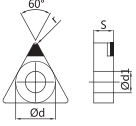
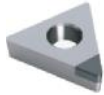
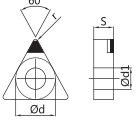
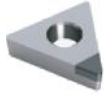
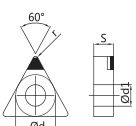
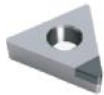
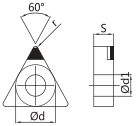
Miniature Tool

**VP** Rhombic 35°  
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VPGW080202	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.2	
	VPGW080204	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.4	
	VPGW080208	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.8	
	VPGT080202	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.2	
	VPGT080204	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.4	
	VPGT080208	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.8	
	VPGW110302	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.2	
	VPGW110304	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.4	
	VPGW110308	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.8	
	VPGT110302	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.2	
	VPGT110304	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.4	
	VPGT110308	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.8	

**TN** Triangular 60°  
Negative

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TNGA110302	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.2		
	TNGA110304	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.4		
	TNGA110308	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.8		
	TNGA160404	●	●	●	●	●	—	Φ9.525	4.76	3.8	0.4		
	TNGA160408	●	●	●	●	●	—	Φ9.525	4.76	3.8	0.8		
	TNGA160412	●	●	●	●	●	—	Φ9.525	4.76	3.8	1.2		
	TNGA160416	●	●	●	●	●	—	Φ9.525	4.76	3.8	1.6		
	TNGA220408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8		
	TNGA220412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2		
	TNGA220416	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.6		
	TNGA270608	●	●	●	●	●	—	Φ15.875	6.35	6.35	0.8		
	TNGA270612	●	●	●	●	●	—	Φ15.875	6.35	6.35	1.2		
	TNGA270616	●	●	●	●	●	—	Φ15.875	6.35	6.35	1.6		

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


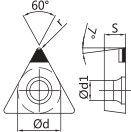


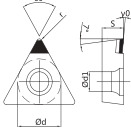

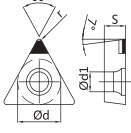

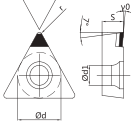
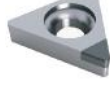
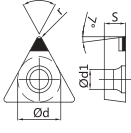

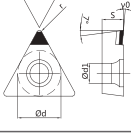
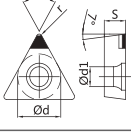
Threading

Parting, Grooving

Miniature Tool

**TC** Triangular 60°  
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TCGW060102	●	●	●	●	●		—	Φ3.97	1.59	2.2	0.2	
	TCGW060104	●	●	●	●	●		—	Φ3.97	1.59	2.2	0.4	
	TCGW06T102	●	●	●	●	●		—	Φ3.97	1.98	2.2	0.2	
	TCGW06T104	●	●	●	●	●		—	Φ3.97	1.98	2.2	0.4	
	TCGW060202	●	●	●	●	●		—	Φ3.97	2.38	2.2	0.2	
	TCGW060204	●	●	●	●	●		—	Φ3.97	2.38	2.2	0.4	
	TCGT060202	●	●	●	●	●		3°~5°	Φ3.97	2.38	2.2	0.2	
	TCGT060204	●	●	●	●	●		3°~5°	Φ3.97	2.38	2.2	0.4	
	TCGW080202	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.2	
	TCGW080204	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.4	
	TCGW080206	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.6	
	TCGT080202	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.2	
	TCGT080204	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.4	
	TCGT080206	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.6	
	TCGW090202	●	●	●	●	●		—	Φ5.56	2.38	2.3	0.2	
	TCGW090204	●	●	●	●	●		—	Φ5.56	2.38	2.3	0.4	
	TCGW090208	●	●	●	●	●		—	Φ5.56	2.38	2.3	0.8	
	TCGT090202	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.3	0.2	
	TCGT090204	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.3	0.4	
	TCGT090208	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.3	0.8	
	TCGW110202	●	●	●	●	●		—	Φ6.35	2.38	2.3	0.2	
	TCGW110204	●	●	●	●	●		—	Φ6.35	2.38	2.3	0.4	
	TCGW110208	●	●	●	●	●		—	Φ6.35	2.38	2.3	0.8	



**TC** Triangular 60°  
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TCGT110202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	TCGT110204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	TCGT110208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	TCGW110302	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.2	
	TCGW110304	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.4	
	TCGW110308	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.8	
	TCGT110302	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.2	
	TCGT110304	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.4	
	TCGT110308	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.8	
	TCGW11T304	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.4	
	TCGW11T306	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.6	
	TCGW11T308	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.8	
	TCGT11T304	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.4	
	TCGT11T306	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.6	
	TCGT11T308	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.8	
	TCGW16T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	TCGW16T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	
	TCGW16T312	●	●	●	●	●	—	Φ9.525	3.97	4.4	1.2	
	TCGT16T304	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.4	
	TCGT16T308	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.8	
	TCGT16T312	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	1.2	
	TCGW160404	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.4	
	TCGW160408	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.8	
	TCGW160412	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.2	
	TCGT160404	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.4	
	TCGT160408	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.8	
	TCGT160412	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


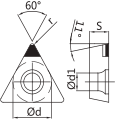

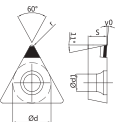

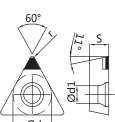
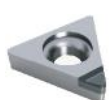
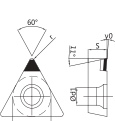

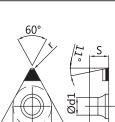

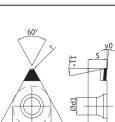

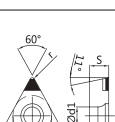

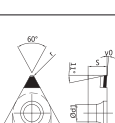
Threading

Parting · Grooving

Miniature Tool

**TP** Triangular 60°  
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TPGW080202	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.2	
	TPGW080204	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.4	
	TPGW080206	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.6	
	TPGT080202	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.2	
	TPGT080204	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.4	
	TPGT080206	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.6	
	TPGW090202	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.2	
	TPGW090204	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.4	
	TPGW090208	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.8	
	TPGT090202	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.2	
	TPGT090204	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.4	
	TPGT090208	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.8	
	TPGW110202	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.2	
	TPGW110204	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.4	
	TPGW110208	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.8	
	TPGT110202	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.2	
	TPGT110204	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.4	
	TPGT110208	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.8	
	TPGW110302	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.2	
	TPGW110304	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.4	
	TPGW110308	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.8	
	TPGT110302	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.2	
	TPGT110304	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.4	
	TPGT110308	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.8	

**TP** Triangular 60°  
Positive 11°

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TPGW160304	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.4		
	TPGW160308	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.8		
	TPGW160312	●	●	●	●	●	—	Φ9.525	3.18	4.4	1.2		
	TPGT160304	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.4		
	TPGT160308	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.8		
	TPGT160312	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	1.2		
	TPGW16T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4		
	TPGW16T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8		
	TPGW16T312	●	●	●	●	●	—	Φ9.525	3.97	4.4	1.2		
	TPGT16T304	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.4		
	TPGT16T308	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.8		
	TPGT16T312	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	1.2		
	TPGW160402	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.2		
	TPGW160404	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.4		
	TPGW160408	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.8		
	TPGW160412	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.2		
	TPGT160402	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.2		
	TPGT160404	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.4		
	TPGT160408	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.8		
	TPGT160412	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.2		


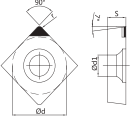

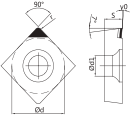

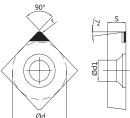

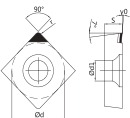

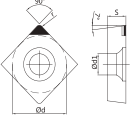

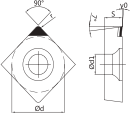

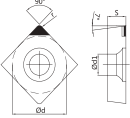

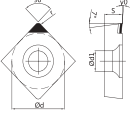
Insert  
 External Toolholder  
 Internal Toolholder  
 PSC Toolholder  
 Threading  
 Parting, Grooving  
 Miniature Tool

**SN** Square 90°  
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SNGA090304	●	●	●	●	●		—	Φ9.525	3.18	3.8	0.4	
	SNGA090308	●	●	●	●	●		—	Φ9.525	3.18	3.8	0.8	
	SNGA090312	●	●	●	●	●		—	Φ9.525	3.18	3.8	1.2	
	SNGA120404	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.4	
	SNGA120408	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.8	
	SNGA120412	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.2	
	SNGA150604	●	●	●	●	●		—	Φ15.875	6.35	6.35	0.4	
	SNGA150608	●	●	●	●	●		—	Φ15.875	6.35	6.35	0.8	
	SNGA150612	●	●	●	●	●		—	Φ15.875	6.35	6.35	1.2	
	SNGA150616	●	●	●	●	●		—	Φ15.875	6.35	6.35	1.6	

**SC** Square 90°  
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SCGW050202	●	●	●	●	●	—	Φ5.56	2.38	2.2	0.2	
	SCGW050204	●	●	●	●	●	—	Φ5.56	2.38	2.2	0.4	
	SCGT050202	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.2	0.2	
	SCGT050204	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.2	0.4	
	SCGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.2	
	SCGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.4	
	SCGW060208	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.8	
	SCGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.2	
	SCGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.4	
	SCGT060208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.8	
	SCGW070202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	SCGW070204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	SCGW070208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	SCGT070202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	SCGT070204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	SCGT070208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	SCGW090302	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.2	
	SCGW090304	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.4	
	SCGW090308	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.8	
	SCGT090302	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.2	
	SCGT090304	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.4	
	SCGT090308	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


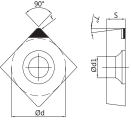

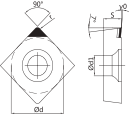

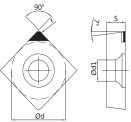

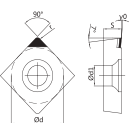
Threading

Parting, Grooving

Miniature Tool

**SC** Square 90°  
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SCGW09T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	SCGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	SCGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	SCGT09T302	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.2	
	SCGT09T304	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.4	
	SCGT09T308	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.8	
	SCGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	SCGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	SCGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	SCGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	SCGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	SCGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

**SP** Square 90°  
Positive 11°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SPGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	SPGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	SPGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	SPGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	SPGW070202	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.2	
	SPGW070204	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.4	
	SPGW070208	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.8	
	SPGT070202	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.2	
	SPGT070204	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.4	
	SPGT070208	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.8	
	SPGW070302	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.2	
	SPGW070304	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.4	
	SPGW070308	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.8	
	SPGT070302	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.2	
	SPGT070304	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.4	
	SPGT070308	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.8	
	SPGW090302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	SPGW090304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	SPGW090308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	SPGT090302	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.2	
	SPGT090304	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.4	
	SPGT090308	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


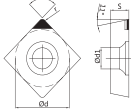

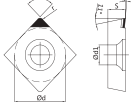

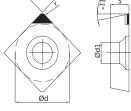

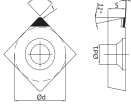
Threading

Parting / Grooving

Miniature Tool


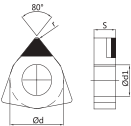
**SP** Square 90°  
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool


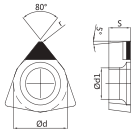

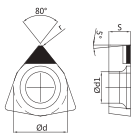

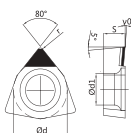
Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SPGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	SPGW09T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	SPGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	SPGT09T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	SPGT09T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	SPGT09T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	SPGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	SPGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	SPGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	SPGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	SPGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	SPGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	



**WN** Trigon 80°  
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	WNGA080404	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.4	
	WNGA080408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8	
	WNGA080412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2	

**WB** Trigon 80°  
Positive 5°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	WBGW060102	●	●	●	●	●	—	Φ3.97	1.59	2.2	0.2	
	WBGW060104	●	●	●	●	●	—	Φ3.97	1.59	2.2	0.4	
	WBGW080202	●	●	●	●	●	—	Φ4.76	2.38	2.4	0.2	
	WBGW080204	●	●	●	●	●	—	Φ4.76	2.38	2.4	0.4	
	WBGTO80202	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.4	0.2	
	WBGTO80204	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.4	0.4	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

**WC** Trigon 80°  
Positive 7°

Insert

External Toolholder


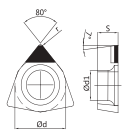

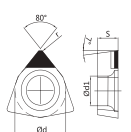

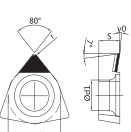

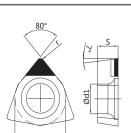

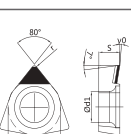
Internal Toolholder

PSC Toolholder


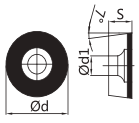
Threading

Parting , Grooving


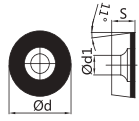
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	WCGW020102	●	●	●	●	●		—	Φ3.97	1.59	2.3	0.2	
	WCGW020104	●	●	●	●	●		—	Φ3.97	1.59	2.3	0.4	
	WCGW050302	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.2	
	WCGW050304	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.4	
	WCGW050308	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.8	
	WCGT050302	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.2	
	WCGT050304	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.4	
	WCGT050308	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.8	
	WCGW06T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	WCGW06T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	WCGW06T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	WCGT06T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	WCGT06T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	WCGT06T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	


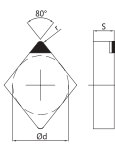
**RC** Round  
Positive 7°

Insert shape	Designation	Material code						Rake angle ( $\gamma_0$ )	Inscribed circle ( $\Phi d$ )	Thickness (s)	Inner hole diameter ( $\Phi d1$ )	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	RCGW060200	●	●	●	●	●	—	$\Phi 6$	2.38	2.8	—		
	RCGW080300	●	●	●	●	●	—	$\Phi 8$	3.18	3.4	—		
	RCGW100300	●	●	●	●	●	—	$\Phi 10$	3.18	3.6	—		
	RCGW120400	●	●	●	●	●	—	$\Phi 12$	4.76	4.2	—		
	RCGW160600	●	●	●	●	●	—	$\Phi 16$	6.35	5.2	—		

**RP** Round  
Positive 11°

Insert shape	Designation	Material code						Rake angle ( $\gamma_0$ )	Inscribed circle ( $\Phi d$ )	Thickness (s)	Inner hole diameter ( $\Phi d1$ )	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	RPGW080300	●	●	●	●	●	—	$\Phi 8$	3.18	3.4	—		
	RPGW100400	●	●	●	●	●	—	$\Phi 10$	4.76	3.8	—		
	RPGW120400	●	●	●	●	●	—	$\Phi 12$	4.76	4.2	—		
	RPGW160400	●	●	●	●	●	—	$\Phi 16$	4.76	5.2	—		

**CN** Rhombic 80°  
Negative

Insert shape	Designation	Material code						Rake angle ( $\gamma_0$ )	Inscribed circle ( $\Phi d$ )	Thickness (s)	Inner hole diameter ( $\Phi d1$ )	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CNGN120404	●	●	●	●	●	—	$\Phi 12.7$	4.76	—	0.4		
	CNGN120408	●	●	●	●	●	—	$\Phi 12.7$	4.76	—	0.8		
	CNGN120412	●	●	●	●	●	—	$\Phi 12.7$	4.76	—	1.2		

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool

**TN** Triangular 60°  
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TNGN110302	●	●	●	●	●	—	Φ6.35	3.18	—	0.2	
	TNGN110304	●	●	●	●	●	—	Φ6.35	3.18	—	0.4	
	TNGN110308	●	●	●	●	●	—	Φ6.35	3.18	—	0.8	
	TNGN160304	●	●	●	●	●	—	Φ9.525	3.18	—	0.4	
	TNGN160308	●	●	●	●	●	—	Φ9.525	3.18	—	0.8	
	TNGN160312	●	●	●	●	●	—	Φ9.525	3.18	—	1.2	
	TNGN160404	●	●	●	●	●	—	Φ9.525	4.76	—	0.4	
	TNGN160408	●	●	●	●	●	—	Φ9.525	4.76	—	0.8	
	TNGN160412	●	●	●	●	●	—	Φ9.525	4.76	—	1.2	
	TNGN160416	●	●	●	●	●	—	Φ9.525	4.76	—	1.6	

**TP** Triangular 60°  
Positive 11°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TPGN090202	●	●	●	●	●	—	Φ5.56	2.38	—	0.2	
	TPGN090204	●	●	●	●	●	—	Φ5.56	2.38	—	0.4	
	TPGN090208	●	●	●	●	●	—	Φ5.56	2.38	—	0.8	
	TPGN110302	●	●	●	●	●	—	Φ6.35	3.18	—	0.2	
	TPGN110304	●	●	●	●	●	—	Φ6.35	3.18	—	0.4	
	TPGN110308	●	●	●	●	●	—	Φ6.35	3.18	—	0.8	
	TPGN160304	●	●	●	●	●	—	Φ9.525	3.18	—	0.4	
	TPGN160308	●	●	●	●	●	—	Φ9.525	3.18	—	0.8	
	TPGN160312	●	●	●	●	●	—	Φ9.525	3.18	—	1.2	
	TPGN160404	●	●	●	●	●	—	Φ9.525	4.76	—	0.4	
	TPGN160408	●	●	●	●	●	—	Φ9.525	4.76	—	0.8	
	TPGN160412	●	●	●	●	●	—	Φ9.525	4.76	—	1.2	
	TPGN160416	●	●	●	●	●	—	Φ9.525	4.76	—	1.6	

**SN** Square 90°  
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SNGN090302	●	●	●	●	●	—	Φ9.525	3.18	—	0.2	
	SNGN090304	●	●	●	●	●	—	Φ9.525	3.18	—	0.4	
	SNGN090308	●	●	●	●	●	—	Φ9.525	3.18	—	0.8	
	SNGN120404	●	●	●	●	●	—	Φ12.7	4.76	—	0.4	
	SNGN120408	●	●	●	●	●	—	Φ12.7	4.76	—	0.8	
	SNGN120412	●	●	●	●	●	—	Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

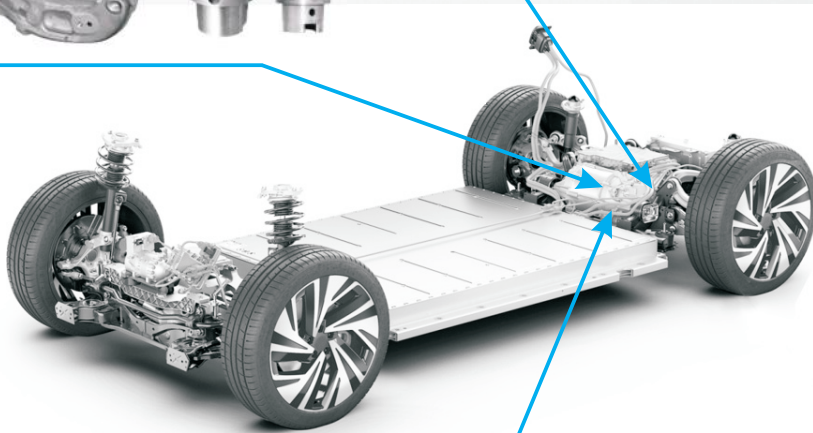
Insert
External Toolholder
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# Electric vehicle industry solutions

Knuckle solution



Motor rear-end cover processing solution



Motor housing solution

## Motor housing solution



### PDEC30 Series - Face milling cutter

**Applications:**

**General tool suitable for roughing and finishing milling of aluminium, copper and other non-ferrous metal surface.**

- Diameter :D63-D250(Customizable)
- Z:3-20(Customizable)
- Holder type:standard milling holder

**Advantages:**

- Light weight, high strength aluminium body.
- Suitable for high efficiency face milling of roughing and finishing Internal coolant goes directly to tip, helpful for chipping removal, with better tool life.
- Flexible insert can regrind and retip, cutter can be reused to save cost.
- Cycle runout within 0.03mm, Axial runout within 0.003 to ensure the workpiece roughness.
- Adjusting the position with spanner is easy and convenient with max scope 2mm, that increases the regrinding numbers.



### Compound finish boring tool with big diamet

**Applications:**

**Aluminium parts of big diameter inner hole for Motor housing**

**Advantages:**

- Light weight, high strength aluminium body.
- Suitable for precision adjustment of finishing machining.
- Simple, lasting body structure.
- The design of internal coolant going directly to insert edge and lubricating is helpful to increase tool life.
- Flexible insert and cartridge with low cost and high performance.
- Can be customized for special solution.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

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## Motor rear-end cover processing solution



### Indexable short hole drilling compound tool



**Applications:**

**General tool suitable for rough and semi-finish machining of workpiece without precast hole.**

**Advantages:**

- The integral design of tool holder and body with excellent rigidity.
- Use special high strength steel with surface strengthening treatment, the tool body has better wear resistance performance.
- Maximum chip flute design can get more smooth chip discharge.
- Compound tool design can realize both rough and semi-finish machining requirements of the hole.
- The insert installation angle with cutting balance design, it will reach slight cutting vibration, low machine spindle load, high cutting efficiency, better drilling precision and surface roughness.
- Through change the material and cutting edge design of indexable inserts, the tool can be used in rough and semi-finish machining of various material workpieces.
- It can be used as the basis of custom special solutions for customers.

### Guide finish boring tool



**Applications:**

**General tool for most area with high precision and production capability.**

**Advantages:**

- With very high precision and machining ability, the flexible insert based on guide pad in the hole guiding and precision cutting to ensure the machining effect with high quality.
- It ensures insert is assembled in the groove by suitable adjustment and clamping system.
- The resistable insert produced with modern manufacturing process can be made with different shape edge and non-standard edge structure.
- The design of internal coolant going directly to insert edge and lubricating is helpful to increase tool life.
- Flexible insert and high wear resistance guide pad with low cost and high performance.
- Can be customized for special solution.



## Steering knuckle solution



### PCD compound finish boring tool

**Applications:**  
Used for the front and back surface machining of aluminum alloy steering knuckle bearing hole.

**Advantages:**

- Rough and finish machining integrated design, when improve working efficiency it does not reduce the machining quality;
- When machining back surface of bearing hole, compound milling structure no need change the tool and this will reduce the tool change time.
- Multi-cutting edge design, improve machining efficiency.



### TDE30 series PCD corn milling tool with HSK holder

**Applications:**  
Applied for end milling and side milling caliper hole surface, threaded hole surface of waterproof cover and other small surface.

**Advantages:**

- PCD corn end milling tool possesses higher machining efficiency and metal remove rate when it is used in large allowance cutting.
- Thread chip removing groove possesses better chip removing performance, and intergral structure can guarantee stable tool strength. Applied for semi-finish and rough machining.
- Applied for end milling, side milling, groove milling, profile milling and thread interpolation milling and other milling.
- PCD possesses high durability and toughness.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool