

CBN & PCD Tools

C1~C34



CBN Tools

C2~C20

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PCD Tools

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MEGACOAT CBN



Extended Tool Life

Improved Stability

High Speed Machining

Kyocera's innovative CBN tools.

CBN Variation and Features Ref. to Page .A16

Various edge preparations are added in high performance MECAGOAT CBN inserts.

Identification System (Turning Insert)

C N G A 12 04 04 S01225 ME

"Turning Indexable Inserts Identification System" Refer to Page B2

Insert Type	Description	Edge Prep.	Manufacturer's Option	Length of cutting edge	No. of Edges	re-grinding
Negative	CNGA120404MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CNGA120404S01225ME	S01225	ME		2	
	CNGA120404S00545MEP	S00545	MEP		2	
	CNGA120404S01225SE	S01225	SE		1	
	CNMN120404S02020	S02020	No Indication (Only KBN900)	Long	plural edge	Possible
Positive	CCMW09T304MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CCMW09T304T00815ME	T00815	ME		2	
	CCMW09T304S01225MES	S01225	MES		2	
	CCMW09T304T00815SE	T00815	SE		1	

● About re-grinding

- 1) Regrinding is possible for inserts without any indication in manufacturer's option. Regrinding can not be available depending on the edge condition.
- 2) Regrinding is not recommended for inserts with manufacturer's symbol like "ME" or "SE"

Note 1) Ref. to Page B3 for insert color.

● How to identify edge preparation

Symbol	Cutting Edge Spec.	Edge Prep.		Shape
		Example		
F	Sharp Edge	F	Sharp Edge	
E	Honed Cutting Edge	E008	R0.08mm Honed	
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 15° Chamfered and Honed Cutting Edge	

● Features of chamfer width and angle

Chamfer width and its angle

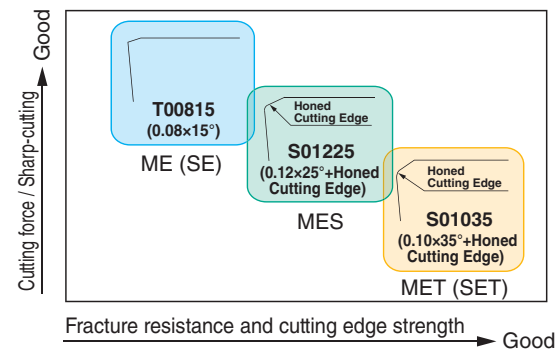
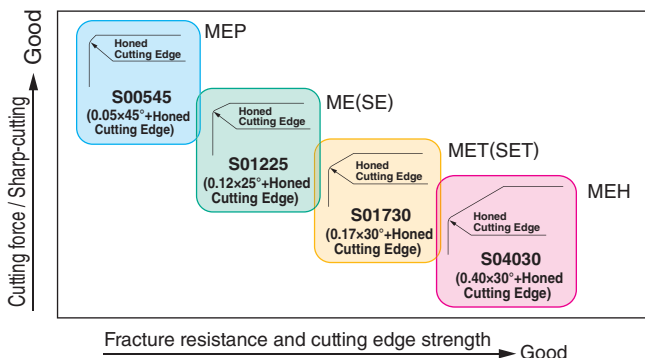
Cutting resistance	Good \longleftrightarrow Poor
Wear resistance	Good \longleftrightarrow Poor
Fracture resistance	Poor \longleftrightarrow Good
Application	Continuous \longleftrightarrow Interruption

Width \longleftrightarrow Angle

Chamfered Cutting Edge Prep. (Chamfered Cutting Edge, Chamfered and Honed Cutting Edge)

(1) Standard cutting edge prep. of negative inserts (Machining of hard materials)

(2) Standard cutting edge prep. of positive inserts (Machining of hard materials)



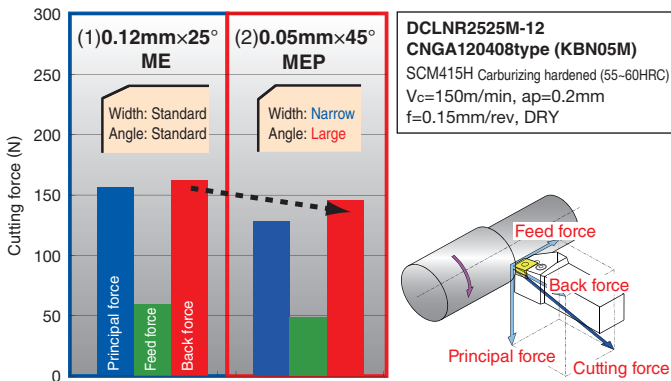
Manufacturer's Option	Edge Prep.	Application and Features
MEP	S00545 0.05mmx45°+Honed Cutting Edge	High speed, continuous machining Excellent crater wear resistance
ME	S01225 0.12mmx25°+Honed Cutting Edge	General purpose
MET	S01730 0.17mmx30°+Honed Cutting Edge	Superior fracture resistance
MEH	S04030 0.40mmx30°+Honed Cutting Edge	Interrupted high feed machining Prevention of flaking

Manufacturer's Option	Edge Prep.	Application and Features
ME	T00815 0.08mmx15°	Chamfered Sharp-cutting oriented, less burring
MES	S01225 0.12mmx25°+Honed Cutting Edge	General purpose
MET	S01035 0.10mmx35°+Honed Cutting Edge	Interrupted machining Stable machining Oriented

Negative Inserts, Features of new edge prep. (Machining of hard materials)

(1)MEP (High speed / continuous machining)

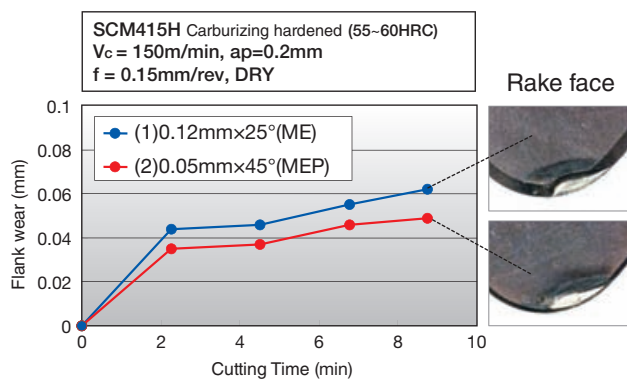
● Cutting Force Comparison



MEP performs lower cutting force than ME

⇒ Sharp cutting!

● Wear comparison

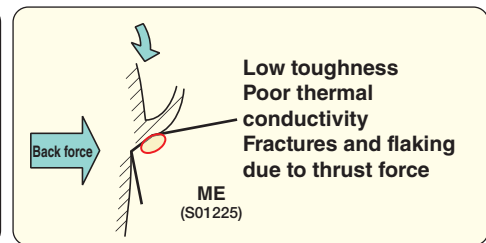
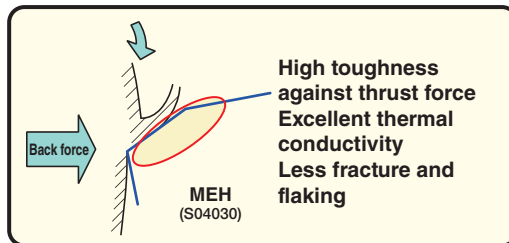


MEP prevents the Flank wear, compared to ME

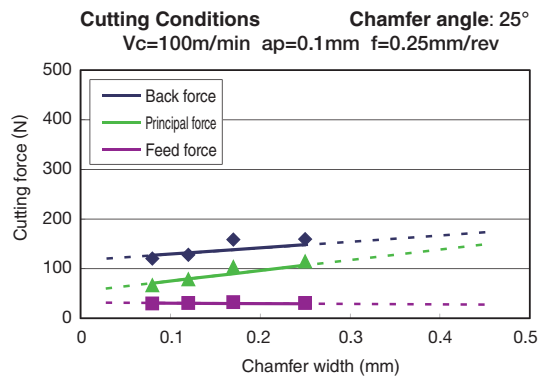
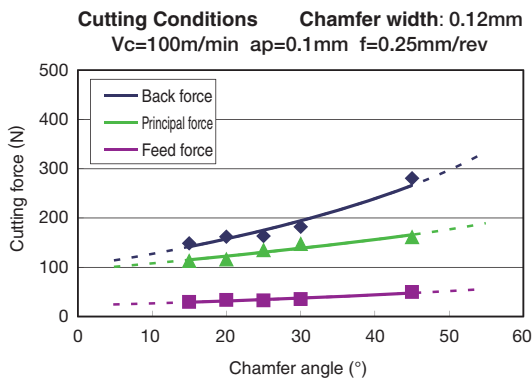
⇒ Prevents crater wear!

(2)MEH (Interruption / High feed cutting)

● Toughness and Controls flaking



● Cutting force and chamfered width / angle

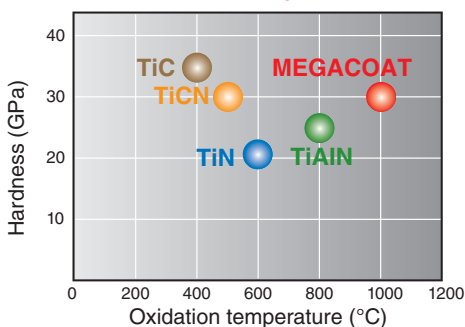


Cutting force is influenced by chamfered angle more than chamfered width.

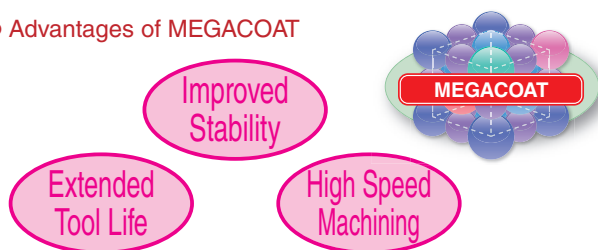
Though enlarging chamfered angle is more effective for fracture resistance improvement than changing chamfered width, the cutting force increases as well. Please refer to the graph for details.

MEGACOAT CBN

● Properties of PVD Coating



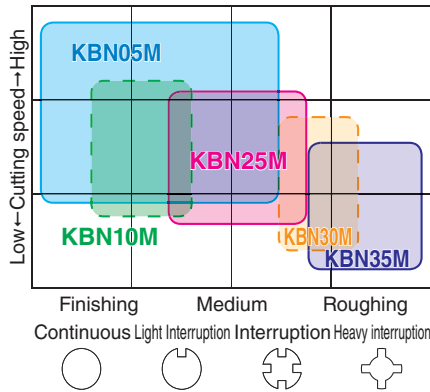
● Advantages of MEGACOAT



- Long tool life and stable machining due to superior heat-resistance and hardness
- Stability improvement through prevention of crater wear (oxidation, diffusional wear)
- High thermal stability and surface smoothness provide excellent surface finish

Application Map

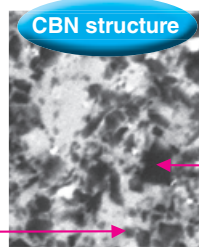
● Hard materials



● Hybrid Grain Structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN

➔ CBN that possess High hardness, toughness and thermal resistance characteristics



Heat diffusion is promoted by coarse grain CBN ⇒ High thermal conductivity

KBN05M is 1st recommended grade for a wide range of application from continuous (high speed finishing) to interrupted machining.

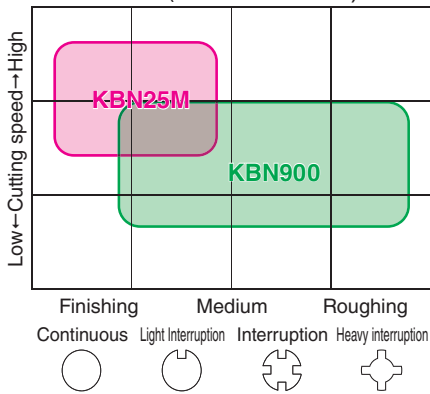
KBN25M: High stability for general machining

KBN30M: High stability in interrupted machining

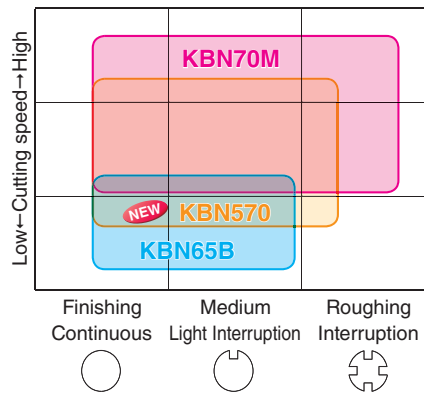
KBN35M: Honeycomb structure CBN

Superior fracture resistance in heavy interrupted machining

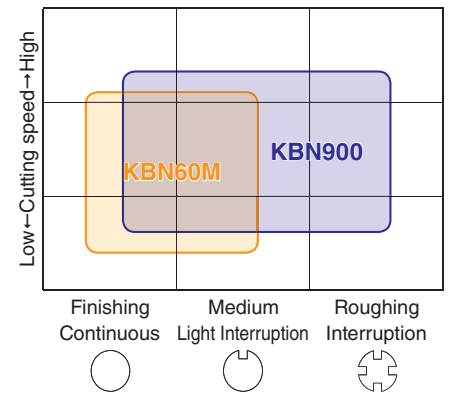
● Roll Materials (Chilled Cast Iron)



● Sintered Steel



● Cast Iron

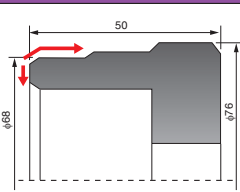


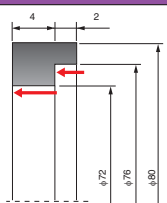
Recommended Cutting Conditions

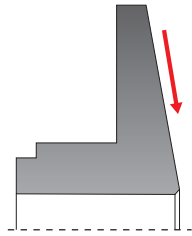

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc (m/min)	ap (mm)	f (mm/rev)
Heat Treated Steel	Over 55HRC	General Finishing	Continuous-Interruption	KBN05M	100 - 150 - 200	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		High Efficient Stable Machining	Light Interruption-Interruption	KBN25M	80 - 120 - 160	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		Interruption (Small ap)	Interruption-Heavy interruption	KBN35M	60 - 100 - 150	0.05 - 0.2 - 0.4	0.05 - 0.08 - 0.1
		Heavy Machining	Continuous-Interruption	KBN900	70 - 90 - 110	0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.2
	Under 55HRC	Finishing	Continuous	*PT600M	60 - 80 - 120	0.2 - 0.5 - 0.7	0.05 - 0.1 - 0.15
Gray Cast Iron	Under 250HB	Finishing	Continuous-Light interruption	KBN60M	300 - 600 - 800	0.05 - 0.2 - 0.5	0.03 - 0.05 - 0.1
		High Efficient Finishing	Continuous-Light interruption	KBN900	500 - 900 - 1200	0.1 - 0.5 - 1.0	0.05 - 0.1 - 0.2
		Heavy Machining	Continuous-Interruption	KBN900	500 - 700 - 900	0.5 - 1.5 - 3.0	0.1 - 0.3 - 0.5
Roll Materials (Chilled Cast Iron)	Over 55HRC	Finishing	Continuous-Interruption	KBN25M	80 - 120 - 160	0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1
		Heavy Machining	Continuous-Interruption	KBN900	70 - 90 - 110	0.3 - 0.7 - 1.0	0.05 - 0.1 - 0.15
Sintered Steel	-	Finishing	Continuous-Light interruption	KBN570	50 - 150 - 250	0.05 - 0.15 - 0.25	0.03 - 0.1 - 0.2
	-	Finishing	Continuous-Interruption	KBN70M	100 - 200 - 250	0.05 - 0.2 - 0.3	0.05 - 0.15 - 0.25

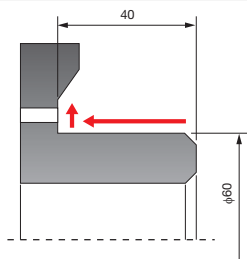
*PT600M : MEGACOAT on Al₂O₃+TiC ceramic

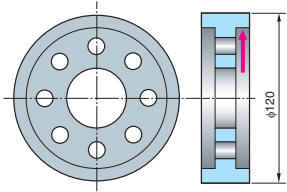
Case Studies

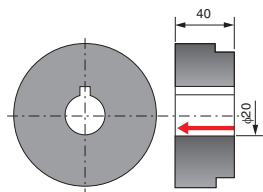
SCr420H(58HRC)	
<ul style="list-style-type: none"> · Gear · External and Face machining and Chamfering · Vc=130 m/min · ap=0.6 mm · f=0.12mm/rev · WET · CNGA120408S01225ME (KBN05M) 	
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge
<ul style="list-style-type: none"> · KBN05M achieved 1.5 times longer tool life than Competitor C. → Its longer tool life contributes to cost-cutting. 	
(Evaluation by the user)	

SCM415(55HRC)	
<ul style="list-style-type: none"> · Stator · Boring · Vc=170 m/min · ap=0.4 mm · f=0.1mm/rev · WET · CNGA120408S01225ME (KBN05M) 	
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge
<ul style="list-style-type: none"> · KBN05M achieved twice longer tool life than competitor D. → Its longer tool life contributes to cost-cutting. 	
(Evaluation by the user)	

SCr420H(58HRC)	
<ul style="list-style-type: none"> · Pulley · Facing (Continuous) · Vc=120 m/min · ap=0.15~0.2 mm · f=0.24mm/rev · WET · DNGA120408S00545MEP (KBN05M) 	
KBN05M-MEP (Edge Preparation : 0.05x45°)	150 pcs/edge
KBN05M-ME (Edge Preparation : 0.12x25°)	100 pcs/edge
Competitor E	100 pcs/edge
<ul style="list-style-type: none"> · Tool life of KBN05M-ME type (Edge prep.: 0.12x25° Chamfered + R honed) is same as competitor E's. · KBN05M-MEP (Edge prep.: 0.05x45° Chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear. 	
	
(Evaluation by the user)	

SCr20(61~65HRC)	
<ul style="list-style-type: none"> · Gear · External turning and facing (Interrupted) · Vc=120 m/min · ap=0.15 mm · f=0.1~0.15mm/rev (External) · WET · CNGA120408S04030MEH (KBN05M) 	
KBN05M-MEH (Edge Preparation : 0.40x30°)	150 pcs/edge
Competitor F	100 pcs/edge
<ul style="list-style-type: none"> · Compared to competitor, F, KBN05M-MEH type (Edge prep.: 0.40x30° Chamfered + R-honed) achieved 1.5 times longer tool life. · No chipping in interrupted machining, and improved productivity (Comp. F's cutting edge got many chipping.) · Feed rate could be increased from 0.15 to 0.25 mm/rev in facing. → Achieved cycle time and cost reduction. 	
(Evaluation by the user)	

SCM420(60HRC)	
<ul style="list-style-type: none"> · Gear Parts · Interrupted face machining · Vc=90m/min · ap=0.5mm · f=0.12mm/rev · Wet→Dry · CNGA120412S01225ME (KBN25M) 	
KBN25M	70 pcs/edge
Competitor G	30 pcs/edge (Unstable)
<ul style="list-style-type: none"> · KBN25M improved tool life up to 70 pieces/edge than is two times more than competitor's G (CBN tool). Also, KBN25M has increased its tool life up to 250 pieces/edge by hanging from wet machining to dry machining. 	
(Evaluation by the user)	

SCM420(58HRC)	
<ul style="list-style-type: none"> · Sleeve · Internal machining (Heavy interrupted) · Vc=100 m/min · ap=0.5 mm · f=0.1mm/rev · WET · TPGB110308S01035MET (KBN35M) 	
KBN35M	115 pcs/edge
Competitor H	100 pcs/edge
<ul style="list-style-type: none"> · KBN35M achieved 15% Longer tool life in heavy interrupted machining compared with Competitor H. · Furthermore it still keeps the insert in a good condition and so provides stable machining result. → Its longer tool life and capability of providing stable result can contribute to cost-cutting and improved efficiency in machining. 	
(Evaluation by the user)	

80° Rhombic / Negative

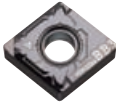
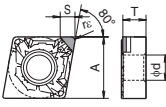
Description	A	T	φd
CNGA 1204_	12.70	4.76	5.16
CNGM 1204_			

Edge Prep.			K													Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN						CBN		
F	Sharp Edge	F	Sharp Edge																
E	Honed Cutting Edge	E008	R0.08mm Honed																
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	H															
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge																
Insert		Description		(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN						CBN				
					rε	S	KBN05M		KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510		KBN525	KBN65B
		CNGA	120404S01215MEW 120408S01215MEW 120412S01215MEW	CNGA	120404MEW 120408MEW 120412MEW	S01215	0.4 0.8 1.2	2.6 2.5 2.5	2	●	●	●	●			●	●		
NEW 		CNGA	120404S00545MEP 120408S00545MEP 120412S00545MEP 120416S00545MEP 120420S00545MEP 120424S00545MEP	-	-	S00545	0.4 0.8 1.2 1.6 2.0 2.4	2.6 2.6 2.5 3.4 3.4 3.3	2	●									
NEW 		CNGA	120404MEF 120408MEF 120412MEF	-	-	F	0.4 0.8 1.2	2.6 2.6 2.5	2									●	●
		CNGA	120402S01225ME 120404S01225ME 120408S01225ME 120412S01225ME NEW 120416S01225ME 120420S01225ME 120424S01225ME	CNGA	120402ME 120404ME 120408ME 120412ME	S01225	0.2 0.4 0.8 1.2 1.6 2.0 2.4	2.6 2.6 2.6 2.5 3.4 3.4 3.3	2	●	●	●	●	●		●	●		
		CNGA	120404T01215ME 120408T01215ME 120412T01215ME	CNGA	120404ME 120408ME 120412ME	T01215	0.4 0.8 1.2	2.6 2.6 2.5	2					●	●				D8 F60 F64
		CNGA	120404S01730MET 120408S01730MET 120412S01730MET NEW 120416S01730MET 120420S01730MET 120424S01730MET	CNGA	120404ME-T 120408ME-T 120412ME-T	S01730	0.4 0.8 1.2 1.6 2.0 2.4	2.6 2.6 2.5 3.4 3.4 3.3	2	●	●	●	●			●			
NEW 		CNGA	120404S04030MEH 120408S04030MEH 120412S04030MEH 120416S04030MEH 120420S04030MEH 120424S04030MEH	-	-	S04030	0.4 0.8 1.2 1.6 2.0 2.4	2.6 2.6 2.5 3.4 3.4 3.3	2	●									
		CNGA	120402S01225SE 120404S01225SE 120408S01225SE 120412S01225SE	CNGA	120402SE 120404SE 120408SE 120412SE	S01225	0.2 0.4 0.8 1.2	2.6 2.6 2.6 2.5	1	●	●				●	●			
		CNGA	120404T01215SE 120408T01215SE 120412T01215SE	CNGA	120404SE 120408SE 120412SE	T01215	0.4 0.8 1.2	2.6 2.6 2.5	1							●	●		
		CNGA	120404S01730SET 120408S01730SET	CNGA	120404SE-T 120408SE-T	S01730	0.4 0.8	2.6 2.6	1		●					●			

80° Rhombic / Negative

(mm)


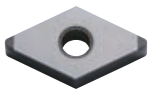
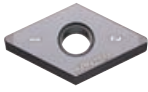


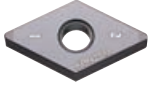

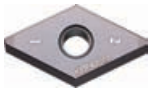
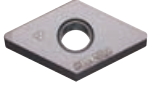
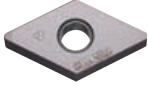
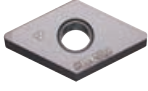
Description	A	T	φd
CNGA 1204_	12.70	4.76	5.16
CNGM 1204_			

Edge Prep.				K											Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)													
F	Sharp Edge	F	Sharp Edge	H														
E	Honed Cutting Edge	E008	R0.08mm Honed	Gray Cast Iron (Without Scale)														
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	Nodular Cast Iron (With Scale)														
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Roughing)														
				Hard Materials (Finishing)														
				Hard Materials (Chip Control)														
				Sintered Steel														
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN				D8 F60 F64		
				rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510		KBN525	KBN65B
 <p>Chip Control</p> 	CNGM 120404S00825BB1	CNGM 120404BB1	S00825	0.4	1.8			●										
	120408S00825BB1	120408BB1		0.8	2.0	1		●										
	120412S00825BB1	120412BB1		1.2	2.2			●										
	CNGM 120404S01225BB2	CNGM 120404BB2	S01225	0.4	2.2			●										
	120408S01225BB2	120408BB2		0.8	2.4	1		●										
	120412S01225BB2	120412BB2		1.2	2.6			●										
	CNGM 120404S01625BB3	CNGM 120404BB3	S01625	0.4	2.6		●	●										
	120408S01625BB3	120408BB3		0.8	2.8	1	●	●										
	120412S01625BB3	120412BB3		1.2	3.0		●	●										



55° Rhombic / Negative

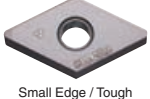
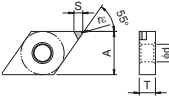
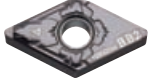
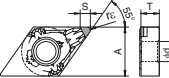
Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16
1506_		6.35	
DNGM 1504_	12.70	4.76	5.16

Edge Prep.			K											Ref. to Page for Applicable Toolholders									
Symbol	Cutting Edge Spec.	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN					CBN							
F	Sharp Edge	F	Sharp Edge																				
E	Honed Cutting Edge	E008	R0.08mm Honed																				
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge																				
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge																				
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN											
				rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525		KBN65B	KBN570				
 Multi Edge / Finishing	DNGA 150404S00545MEP	-	S00545	0.4	2.6	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	D10 D11 F61 F66		
	150408S00545MEP	-		0.8	2.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	150412S00545MEP	-		1.2	1.9		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	150416S00545MEP	-		1.6	3.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	150420S00545MEP	-		2.0	3.5		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	150424S00545MEP	-		2.4	3.1		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
 Multi Edge / Sharp Edge	DNGA 150404MEF	-	F	0.4	2.6	2														D10 D11			
	150408MEF	-		0.8	2.2																		
 Multi Edge	DNGA 150401S01225ME	DNGA 150401ME	S01225	0.1	2.8	2	●	●	●	●	●	●	●	●	●	●	●	●	●	F61 F66			
	150402S01225ME	150402ME		0.2	2.7		●	●	●	●	●	●	●	●	●	●	●	●	●		●		
	150404S01225ME	150404ME		0.4	2.6		●	●	●	●	●	●	●	●	●	●	●	●	●		●		
	150408S01225ME	150408ME		0.8	2.2		●	●	●	●	●	●	●	●	●	●	●	●	●		●		
	150412S01225ME	150412ME		1.2	1.9		●	●	●	●	●	●	●	●	●	●	●	●	●		●		
	NEW 150416S01225ME	-		1.6	3.8		●	●	●	●	●	●	●	●	●	●	●	●	●		●		
	150420S01225ME	-	2.0	3.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	150424S01225ME	-	2.4	3.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	DNGA 150404T01215ME	DNGA 150404ME	T01215	0.4	2.6	2															D10 D11 F61		
	150408T01215ME	150408ME		0.8	2.2																		
	150412T01215ME	150412ME		1.2	1.9																		
	 Multi Edge / Tough	DNGA 150604S01225ME	DNGA 150604ME	S01225	0.4	2.6	2	●	●	●	●	●	●	●	●	●	●	●	●	D10 D11			
150608S01225ME		150608ME	0.8		2.2	●		●	●	●	●	●	●	●	●	●	●	●	●				
150612S01225ME		150612ME	1.2	1.9	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
 Multi Edge	DNGA 150604T01215ME	DNGA 150604ME	T01215	0.4	2.6	2													F61				
	150608T01215ME	150608ME		0.8	2.2																		
 Multi Edge / Tough	DNGA 150404S01730MET	DNGA 150404ME-T	S01730	0.4	2.6	2	●	●	●	●	●	●	●	●	●	●	●	●	D10 D11 F61 F66				
	150408S01730MET	150408ME-T		0.8	2.2		●	●	●	●	●	●	●	●	●	●	●	●		●			
	150412S01730MET	150412ME-T		1.2	1.9		●	●	●	●	●	●	●	●	●	●	●	●		●			
	NEW 150416S01730MET	-		1.6	3.8		●	●	●	●	●	●	●	●	●	●	●	●		●			
	150420S01730MET	-		2.0	3.5		●	●	●	●	●	●	●	●	●	●	●	●		●			
	150424S01730MET	-		2.4	3.1		●	●	●	●	●	●	●	●	●	●	●	●		●			
 Multi Edge / Tough	DNGA 150604S01730MET	DNGA 150604ME-T	S01730	0.4	2.6	2	●	●	●	●	●	●	●	●	●	●	●	D10 D11 F61					
	150608S01730MET	150608ME-T		0.8	1.9		●	●	●	●	●	●	●	●	●	●	●		●				
	150612S01730MET	150612ME-T		1.2	1.9		●	●	●	●	●	●	●	●	●	●	●		●				
 Multi Edge / Interruption	DNGA 150404S04030MEH	-	S04030	0.4	2.6	2	●	●	●	●	●	●	●	●	●	●	●	D10 D11					
	150408S04030MEH	-		0.8	2.2		●	●	●	●	●	●	●	●	●	●	●		●				
	150412S04030MEH	-		1.2	1.9		●	●	●	●	●	●	●	●	●	●	●		●				
	150416S04030MEH	-		1.6	3.8		●	●	●	●	●	●	●	●	●	●	●		●				
	150420S04030MEH	-		2.0	3.5		●	●	●	●	●	●	●	●	●	●	●		●				
	150424S04030MEH	-		2.4	3.1		●	●	●	●	●	●	●	●	●	●	●		●				
 Small Edge	DNGA 150401S01225SE	DNGA 150401SE	S01225	0.1	2.2	1		●											F61 F66				
	150402S01225SE	150402SE		0.2	2.5			●															
	150404S01225SE	150404SE		0.4	2.3			●															
	150408S01225SE	150408SE		0.8	1.9			●															
	150412S01225SE	150412SE		1.2	1.9			●															
	 Small Edge	DNGA 150404T01215SE	DNGA 150404SE	T01215	0.4	2.3	1												D10				
		150408T01215SE	150408SE		0.8	1.9																	
		 Small Edge	DNGA 150604S01225SE	DNGA 150604SE	S01225	0.4	2.3	1	●	●										D11 F61			
			150608S01225SE	150608SE		0.8	1.9		●	●													
150612S01225SE	150612SE	1.2	1.9	●	●																		

CBN & PCD Inserts are sold in 1 piece boxes.

55° Rhombic / Negative

Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16
1506_		6.35	
DNGM 1504_	12.70	4.76	5.16

Edge Prep.				K															
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)														
F	Sharp Edge	F	Sharp Edge	H															
E	Honed Cutting Edge	E008	R0.08mm Honed		Gray Cast Iron (Without Scale)														
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	H															
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge		Hard Materials (Roughing)														
				H															
					Hard Materials (Finishing)														
				H															
					Hard Materials (Chip Control)														
				H															
					Sintered Steel														
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN			Ref. to Page for Applicable Toolholders				
				rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M		KBN510	KBN525	KBN65B	KBN570
 Small Edge / Tough		DNGA 150404S01730SET 150408S01730SET	DNGA 150404SE-T 150408SE-T	S01730	0.4	2.3	1												D10 D11 F61 F66
					0.8	1.9													
 Chip Control		DNGM 150404S00825BB1 150408S00825BB1 150412S00825BB1	DNGM 150404BB1 150408BB1 150412BB1	S00825	0.4	1.6	1	●	●										
					0.8	1.6		●	●										
		1.2	1.8	●	●														
		DNGM 150404S01225BB2 150408S01225BB2 150412S01225BB2	DNGM 150404BB2 150408BB2 150412BB2	S01225	0.4	1.8	1		●	●									
					0.8	2.0		●	●										
		1.2	2.1	●	●														
DNGM 150404S01625BB3 150408S01625BB3 150412S01625BB3	DNGM 150404BB3 150408BB3 150412BB3	S01625	0.4	2.2	1	●	●												
			0.8	2.5		●	●												
1.2	2.5	●	●																



CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

90° Square / 60° Triangle / Negative

Description	A	T	φd (mm)
SNGA 1204	12.70	4.76	5.16
TNGA 1604	9.525	4.76	3.81

Edge Prep.				K											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN					CBN			
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed																	
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	H																
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge																	
Insert		Description		(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN						
					rε	S	KBN05M		KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M		KBN510	KBN525	KBN65B	KBN570
NEW			SNGA 120408S00545MEP 120412S00545MEP	- -	S00545	0.8 1.8 1.2 2.2	2	●												
			SNGA 120404S01225ME 120408S01225ME SNGA 120404T01215ME 120408T01215ME 120412T01215ME	SNGA 120404ME 120408ME SNGA 120404ME 120408ME 120412ME	S01225 T01215	0.4 1.8 0.8 1.8 0.4 1.8 0.8 1.8 1.2 1.8	2	●	●	●	●	●	●	●	●	●				
			SNGA 120404S01730MET 120408S01730MET 120412S01730MET	SNGA 120404ME-T 120408ME-T 120412ME-T	S01730	0.4 1.8 0.8 1.8 1.2 2.2	2	●	●	●	●	●	●	●	●	●				
NEW			SNGA 120408S04030MEH 120412S04030MEH	- -	S04030	0.8 1.8 1.2 2.2	2	●												
NEW			TNGA 160404S00545MEP 160408S00545MEP 160412S00545MEP	- - -	S00545	0.4 2.7 0.8 2.4 1.2 2.1	3	●												
NEW			TNGA 160404MEF 160408MEF 160412MEF	- - -	F	0.4 2.7 0.8 2.4 1.2 2.1	3												●	●
			TNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME 160412S01225ME TNGA 160404T01215ME 160408T01215ME 160412T01215ME	TNGA 160401ME 160402ME 160404ME 160408ME 160412ME TNGA 160404ME 160408ME 160412ME	S01225 T01215	0.1 2.9 0.2 2.8 0.4 2.7 0.8 2.4 1.2 2.1 0.4 2.7 0.8 2.4 1.2 2.1	3	●	●	●	●	●	●	●	●	●				
			TNGA 160404S01730MET 160408S01730MET 160412S01730MET	TNGA 160404ME-T 160408ME-T 160412ME-T	S01730	0.4 2.7 0.8 2.4 1.2 2.1	3	●	●	●	●	●	●	●	●	●				
NEW			TNGA 160404S04030MEH 160408S04030MEH 160412S04030MEH	- - -	S04030	0.4 2.7 0.8 2.4 1.2 2.1	3	●												


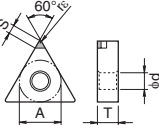

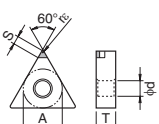

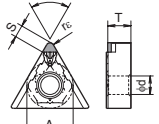


CBN & PCD Inserts are sold in 1 piece boxes.

(mm)

Description	A	T	φd
TNGA 1604_	9.525	4.76	3.81
TNGM 1604_			

60° Triangle / Negative

Edge Prep.				K											Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example																	
F	Sharp Edge	F	Sharp Edge	K	Gray Cast Iron (With Scale)														
E	Honed Cutting Edge	E008	R0.08mm Honed		Gray Cast Iron (Without Scale)														
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Nodular Cast Iron (With Scale)														
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	H	Hard Materials (Roughing)														
					Hard Materials (Finishing)														
					Hard Materials (Chip Control)														
					Sintered Steel														
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN							
				r _ε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M		KBN510	KBN525	KBN65B	KBN570
 Small Edge		TNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE	S01225	0.1	2.6		●							●					
				0.2	2.9	1	●							●					
				0.4	2.7		●								●				
				0.8	2.4		●								●				
 Small Edge / Tough		TNGA 160404S01730SET 160408S01730SET	S01730	0.4	2.7			●						●					
				0.8	2.4	1		●						●					
 Chip Control		TNGM 160404S00825BB1 160408S00825BB1 160412S00825BB1	S00825	0.4	1.5		●	●											
				0.8	1.7	1	●	●											
		TNGM 160404S01225BB2 160408S01225BB2 160412S01225BB2	S01225	0.4	1.9		●												
				0.8	2.1	1	●												
		TNGM 160404S01625BB3 160408S01625BB3 160412S01625BB3	S01625	0.4	2.2		●	●											
				0.8	2.4	1	●	●											
				1.2	2.6		●												



CBN




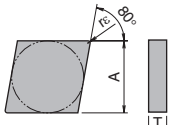

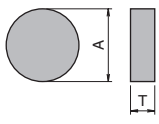

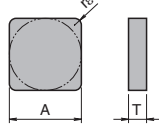

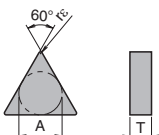
35° Rhombic / 80° Trigon / Negative

Description	A	T	φd
VNGA 1604	9.525	4.76	3.81
WNGA 0804	12.70	4.76	5.16

Edge Prep.			K											Ref. to Page for Applicable Toolholders						
Symbol	Cutting Edge Spec.	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN					CBN				
F	Sharp Edge	F	Sharp Edge																	
E	Honed Cutting Edge	E008	R0.08mm Honed																	
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge																	
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge																	
Insert		Description		(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN						
						r _ε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN65B
NEW			VNGA 160404S00545MEP 160408S00545MEP	- -	S00545	0.4 0.8	2.0 1.8	2	●											
NEW			VNGA 160404MEF 160408MEF	- -	F	0.4 0.8	2.0 1.8	2												●
			VNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME	VNGA 160401ME 160402ME 160404ME 160408ME	S01225	0.1 0.2 0.4 0.8	2.6 2.3 2.0 1.8	2	●	●	●	●	●	●	●	●	●	●	●	●
			VNGA 160404T01215ME 160408T01215ME	VNGA 160404ME 160408ME	T01215	0.4 0.8	2.0 1.8	2							●	●				
			VNGA 160404S01730MET 160408S01730MET	VNGA 160404ME-T 160408ME-T	S01730	0.4 0.8	2.0 1.8	2	●	●	●	●	●				●			
NEW			VNGA 160404S04030MEH 160408S04030MEH	- -	S04030	0.4 0.8	2.0 1.8	2	●											
			VNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE	VNGA 160401SE 160402SE 160404SE 160408SE	S01225	0.1 0.2 0.4 0.8	2.6 2.3 1.9 2.7	1		●	●	●	●				●	●	●	●
			VNGA 160404T01215SE 160408T01215SE	VNGA 160404SE 160408SE	T01215	0.4 0.8	1.9 2.7	1												●
			VNGA 160404S01730SET 160408S01730SET	VNGA 160404SE-T 160408SE-T	S01730	0.4 0.8	1.9 2.7	1		●							●			
			WNGA 080404S01225ME 080408S01225ME 080412S01225ME	WNGA 080404ME 080408ME 080412ME	S01225	0.4 0.8 1.2	2.0 2.6 2.5	3	●	●	●	●	●	●	●	●	●	●	●	●
			WNGA 080404T01215ME 080408T01215ME 080412T01215ME	WNGA 080404ME 080408ME 080412ME	T01215	0.4 0.8 1.2	2.0 2.6 2.5	3							●	●				
			WNGA 080404S01730MET 080408S01730MET 080412S01730MET	WNGA 080404ME-T 080408ME-T 080412ME-T	S01730	0.4 0.8 1.2	2.0 2.6 2.5	3	●	●	●	●	●	●	●	●				
			WNGA 080404S01225SE 080408S01225SE	WNGA 080404SE 080408SE	S01225	0.4 0.8	2.0 1.9	1	●											
			WNGA 080404S01730SET	WNGA 080404SE-T	S01730	0.4	2.0	1									●			

Negative (Solid)

Description	(mm)		Description	(mm)	
	A	T		A	T
CNMN 0903_	9.525	3.18	SNMN 0903_	9.525	3.18
1204_	12.70	4.76	1203_	12.70	3.18
RNMN 0903_	9.525	3.18	1204_		4.76
1203_	12.70	3.18	TNMN 1103_	6.35	3.18
1204_		4.76	1604_	9.525	4.76

Edge Prep.				K	Gray Cast Iron (With Scale)		⚡	Ref. to Page for Applicable Toolholders	
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)				⚡
F	Sharp Edge	F	Sharp Edge	Nodular Cast Iron (With Scale)					
E	Honed Cutting Edge	E008	R0.08mm Honed	Hard Materials (Roughing)					
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	Hard Materials (Finishing)		●			
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)					
				Sintered Steel					
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) r _ε	No. of Edges	PVD Coated CBN KBN900			
 Solid		CNMN 090308S02020	CNMN 090308	S02020	4	●	D32		
		CNMN 090312S02020	CNMN 090312	S02020			0.8		●
		CNMN 120408S02020	CNMN 120408	S02020			1.2	●	D22
		CNMN 120412S02020	CNMN 120412	S02020			1.2	●	
CNMN 120416S02020	CNMN 120416	S02020	1.6	●					
 Solid		RNMN 090300S02020	RNMN 090300	S02020	Depends on ap	●	D33		
		RNMN 120300S02020	RNMN 120300	S02020				-	●
		RNMN 120400S02020	RNMN 120400	S02020			-	●	D27 D33
 Solid		SNMN 090308S02020	SNMN 090308	S02020	8	●	D34		
		SNMN 090312S02020	SNMN 090312	S02020				0.8	●
		SNMN 120308S02020	SNMN 120308	S02020			0.8	●	D35
		SNMN 120312S02020	SNMN 120312	S02020			1.2	●	
		SNMN 120408S02020	SNMN 120408	S02020			0.8	●	D25 D34 D35 F71
		SNMN 120412S02020	SNMN 120412				1.2	●	
SNMN 120416S02020	SNMN 120416	1.6	●						
SNMN 120420S02020	SNMN 120420	2.0	●						
 Solid		TNMN 110308S02020	TNMN 110308	S02020	6	●	D36 F73		
		TNMN 160408S02020	TNMN 160408	S02020			0.8	●	
		TNMN 160412S02020	TNMN 160412	S02020			1.2	●	D26
		TNMN 160416S02020	TNMN 160416	S02020			1.6	●	




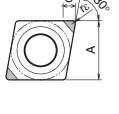
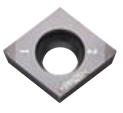


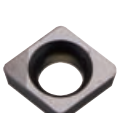






80° Rhombic / Positive

*Thickness of CC_0301_ and CC_0401_ are different (mm)

(mm)


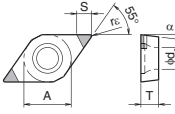
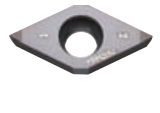
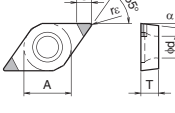

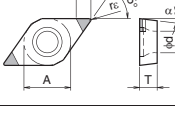
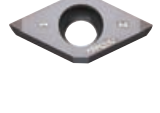
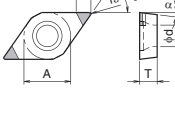

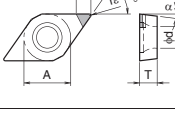

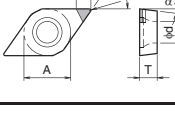
Description	A	T	φd	α
CCMW *0301_	3.5	1.4	1.9	7°
*0401_	4.3	1.8	2.3	
0602_	6.35	2.38	2.8	
09T3_	9.525	3.97	4.4	

Description	A	T	φd	α
CPGB 0802_	7.94	2.38	3.5	11°
0903_	9.525	3.18	4.5	

Edge Prep.				K											Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)														
F	Sharp Edge	F	Sharp Edge	H	Gray Cast Iron (Without Scale)														
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Roughing)														
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	Hard Materials (Finishing)															
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)															
					Sintered Steel														
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN		Ref. to Page for Applicable Toolholders					
				r _ε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN65B	KBN570
NEW 	 Multi Edge / Sharp Edge	CCMW 09T304MEF 09T308MEF	F	0.4	1.9	2													
	Multi Edge	CCMW 060202T00815ME 060204T00815ME 060208T00815ME CCMW 09T302T00815ME 09T304T00815ME 09T308T00815ME	T00815	0.2	2.0	2	●	●	●	●	●	●	●	●	●	●	●	●	●
NEW 	Multi Edge / General Purpose	CCMW 060204S01225MES 060208S01225MES CCMW 09T304S01225MES 09T308S01225MES	S01225	0.4	1.9	2	●												
	Multi Edge / Tough	CCMW 09T304S01035MET 09T308S01035MET	S01035	0.4	1.9	2	●	●	●	●	●	●	●	●	●	●	●	●	●
	Small Edge	*CCMW 030102T00815SE 030104T00815SE *CCMW 040102T00815SE 040104T00815SE CCMW 060202T00815SE 060204T00815SE CCMW 09T302T00815SE 09T304T00815SE	T00815	0.2	1.4	1	●	●	●	●	●	●	●	●	●	●	●	●	●
	Small Edge / Tough	*CCMW 030102S01035SET 030104S01035SET *CCMW 040102S01035SET 040104S01035SET CCMW 060204S01035SET CCMW 09T304S01035SET	S01035	0.2	1.4	1	●	●	●	●	●	●	●	●	●	●	●	●	●
	Multi Edge	CPGB 080204T00815ME 090302T00815ME 090304T00815ME	T00815	0.4	1.9	2	●	●	●	●	●	●	●	●	●	●	●	●	●
NEW 	Multi Edge / General Purpose	CPGB 090304S01225MES 090308S01225MES	S01225	0.4	1.9	2	●												
	Multi Edge / Tough	CPGB 080204S01035MET 080208S01035MET CPGB 090304S01035MET 090308S01035MET	S01035	0.4	1.9	2	●	●	●	●	●	●	●	●	●	●	●	●	●
	Small Edge	CPGB 080202T00815SE 080204T00815SE CPGB 090302T00815SE 090304T00815SE	T00815	0.2	1.9	1	●	●	●	●	●	●	●	●	●	●	●	●	●
	Small Edge / Tough	CPGB 080204S01035SET 090304S01035SET	S01035	0.4	1.9	1	●	●	●	●	●	●	●	●	●	●	●	●	●

55° Rhombic / Positive

Description	A	T	φd	α
DCMW 0702_	6.35	2.38	2.8	7°
11T3_	9.525	3.97	4.4	

Edge Prep.				K											Ref. to Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)									Sintered Steel		
F	Sharp Edge	F	Sharp Edge															
E	Honed Cutting Edge	E008	R0.08mm Honed															
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)											
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge															
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN		Ref. to the table below				
				rε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN65B
NEW  Multi Edge / Sharp Edge	 DCMW 11T304MEF 11T308MEF	- -	F	0.4	1.7	2												
 Multi Edge	 DCMW 070202T00815ME 070204T00815ME 070208T00815ME DCMW 11T302T00815ME 11T304T00815ME 11T308T00815ME 11T312T00815ME	DCMW 070202ME 070204ME 070208ME DCMW 11T302ME 11T304ME 11T308ME 11T312ME	T00815 T00815	0.2 0.4	1.9 1.7	2	●	●	●	●	●	●	●	●	●	●	●	●
NEW  Multi Edge / General Purpose	 DCMW 11T302S01225MES 11T304S01225MES 11T308S01225MES	- - -	S01225	0.2	1.9	2	●	●	●									
 Multi Edge / Tough	 DCMW 070202S01035MET 070204S01035MET 070208S01035MET DCMW 11T302S01035MET 11T304S01035MET 11T308S01035MET 11T312S01035MET	DCMW 070202ME-T 070204ME-T 070208ME-T DCMW 11T302ME-T 11T304ME-T 11T308ME-T 11T312ME-T	S01035 S01035	0.2	1.9	2	●	●	●	●					●			
 Small Edge	 DCMW 070202T00815SE 070204T00815SE DCMW 11T302T00815SE 11T304T00815SE 11T308T00815SE	DCMW 070202SE 070204SE DCMW 11T302SE 11T304SE 11T308SE	T00815 T00815	0.2	1.9	1	●	●					●	●	●	●		
 Small Edge / Tough	 DCMW 070204S01035SET DCMW 11T302S01035SET 11T304S01035SET 11T308S01035SET	DCMW 070204SE-T DCMW 11T302SE-T 11T304SE-T 11T308SE-T	S01035 S01035	0.4	1.7	1									●			

Insert Description	Ref. to Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

● CC type / TP type

Insert Description	Ref. to Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F37
CC..09T3 type	E22,E23,E34,F37,F62

Insert Description	Ref. to Page for Applicable Toolholders
TP..0802type	E29,F49
TP..0902 type	F47,F49

Insert Description	Ref. to Page for Applicable Toolholders
TP..1103 type	E29,F47,F48
TP..1603 type	F47,F48

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.



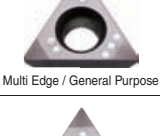




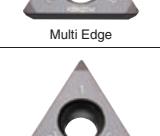


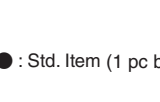


CBN Tools

How to read pages of "Turning Inserts" **B13** (mm)

60° Triangle / Positive

Description	A	T	ϕd	α	(mm)
TPGB 0802_	4.76	2.38	2.5	11°	11°
0902_	5.56		3.0		
TPGB 1103_	6.35	3.18	3.5	11°	11°
1603_	9.525		4.5		
TPGW 1604_	9.525	4.76	4.4	11°	11°

Edge Prep.				K													Ref. to Page for Applicable Toolholders		
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale) Gray Cast Iron (Without Scale) Nodular Cast Iron (With Scale) Hard Materials (Roughing) Hard Materials (Finishing) Hard Materials (Chip Control) Sintered Steel														
F	Sharp Edge	F Sharp Edge		H															
E	Honed Cutting Edge	E008 R0.08mm Honed																	
T	Chamfered Cutting Edge	T01215 0.12mm x 15° Chamfered Cutting Edge																	
S	Chamfered and Honed Cutting Edge	S01225 0.12mm x 25° Chamfered and Honed Cutting Edge																	
Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN		Ref. to the table below C15					
				r_{ϵ}	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN65B	KBN570
	TPGB 110304MEF	-	F	0.4	2.1	3													●
	110308MEF	-		0.8	1.8														
	TPGB 110302T00815ME	TPGB 110302ME	T00815	0.2	2.3	3	●	●	●				●					●	●
	110304T00815ME	110304ME		0.4	2.1		●	●	●				●						
	110308T00815ME	110308ME	T00815	0.8	1.8	3	●	●	●				●					●	●
	160304T00815ME	160304ME		0.4	1.8		●	●	●				●						
	160308T00815ME	160308ME	T00815	0.8	1.5	3	●	●	●				●					●	●
	TPGB 110304S01225MES	-		S01225	0.4		2.1	3	●										
	110308S01225MES	-	S01225	0.8	1.8	3	●												
	TPGB 110302S01035MET	TPGB 110302ME-T		S01035	0.2		2.3	3	●	●	●				●				
	110304S01035MET	110304ME-T	S01035		0.4	2.1	3		●	●	●				●				
	110308S01035MET	110308ME-T		0.8	1.8	●		●	●				●						
	160304S01035MET	160304ME-T	S01035	0.4	1.8	3	●	●											●
	160308S01035MET	160308ME-T		0.8	1.5		●	●											
	TPGB 080202T00815SE	TPGB 080202SE	T00815	0.2	1.8	1	●	●										●	●
	080204T00815SE	080204SE		0.4	1.6		●	●											
	TPGB 090202T00815SE	TPGB 090202SE	T00815	0.2	1.8	1	●	●										●	●
	090204T00815SE	090204SE		0.4	1.6		●	●											
	TPGB 110302T00815SE	TPGB 110302SE	T00815	0.2	1.9	1	●											●	●
	110304T00815SE	110304SE		0.4	1.8		●												
	110308T00815SE	110308SE	T00815	0.8	1.5	1	●											●	●
	160302T00815SE	160302SE		0.2	1.9		●												
	160304T00815SE	160304SE	T00815	0.4	1.8	1	●												●
	TPGB 080202S01035SET	TPGB 080202SE-T		S01035	0.2		1.8	1	●	●									
	080204S01035SET	080204SE-T	S01035		0.4	1.6	1		●	●									
	TPGB 090202S01035SET	TPGB 090202SE-T		S01035	0.2	1.8		1	●	●									
	090204S01035SET	090204SE-T	S01035		0.4	1.6	1		●	●									
	TPGB 110304S01035SET	TPGB 110304SE-T		S01035	0.4	1.8		1											
	110308S01035SET	110308SE-T	S01035		0.8	1.5	1												
	160304S01035SET	160304SE-T		S01035	0.4	1.8		1											
	160308S01035SET	160308SE-T	S01035		0.8	1.5	1												
	TPGW 160404T00815ME	TPGW 160404ME		T00815	0.4	1.8		3	●	●									
	160408T00815ME	160408ME	T00815		0.8	1.5	3		●	●									
	TPGW 160404S01035MET	TPGW 160404ME-T		S01035	0.4	1.8		3	●	●									
	160408S01035MET	160408ME-T	S01035		0.8	1.5	3		●	●									
	TPGW 160404T00815SE	TPGW 160404SE		T00815	0.4	1.8		1											
	TPGW 160404S01035SET	TPGW 160404SE-T	S01035		0.4	1.9	1												

CBN & PCD Inserts are sold in 1 piece boxes.

(mm)

35° Rhombic / Positive

Description	A	T	φd	α
VBGW 1103_	6.35	3.18	2.8	5°
1604_	9.525	4.76	4.4	
VCGW 0802_	4.76	2.38	2.3	7°

Edge Prep.			K	Material Compatibility											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)	Sintered Steel	MEGACOAT CBN					CBN				
F	Sharp Edge	F Sharp Edge	H	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
E	Honed Cutting Edge	E008 R0.08mm Honed																H	●	●
T	Chamfered Cutting Edge	T01215 0.12mm x 15° Chamfered Cutting Edge	H	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
S	Chamfered and Honed Cutting Edge	S01225 0.12mm x 25° Chamfered and Honed Cutting Edge																H	●	●
Insert		Description	(Previous Description)	Edge Prep.	rε	S	No. of Edges	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525			
NEW		VBGW 110304MEF 110308MEF	-	F	0.4	2.0	2												●	
		VBGW 160404MEF 160408MEF	-			0.8		1.7												
		VBGW 110302T00815ME 110304T00815ME 110308T00815ME	VBGW 110302ME 110304ME 110308ME	T00815	0.2	2.4	2	●	●	●	●	●	●	●	●	●	●	●	●	
		VBGW 160402T00815ME 160404T00815ME 160408T00815ME	VBGW 160402ME 160404ME 160408ME	T00815	0.4	2.0			●	●	●	●	●	●	●	●	●	●	●	●
					0.8	1.7			●	●	●	●	●	●	●	●	●	●	●	●
NEW		VBGW 110304S01225MES VBGW 160404S01225MES	-	S01225	0.4	2.0	2	●												
				S01225	0.4	2.0			●											
		VBGW 110302S01035MET 110304S01035MET 110308S01035MET	VBGW 110302ME-T 110304ME-T 110308ME-T	S01035	0.2	2.4	2	●	●	●	●	●	●	●	●	●	●	●	●	
		VBGW 160402S01035MET 160404S01035MET 160408S01035MET	VBGW 160402ME-T 160404ME-T 160408ME-T	S01035	0.4	2.0			●	●	●	●	●	●	●	●	●	●	●	●
					0.8	1.7			●	●	●	●	●	●	●	●	●	●	●	●
		VBGW 110302T00815SE 110304T00815SE 110308T00815SE	VBGW 110302SE 110304SE 110308SE	T00815	0.2	2.8	1	●	●	●	●	●	●	●	●	●	●	●	●	
		VBGW 160402T00815SE 160404T00815SE 160408T00815SE	VBGW 160402SE 160404SE 160408SE	T00815	0.4	2.4			●	●	●	●	●	●	●	●	●	●	●	●
					0.8	1.7			●	●	●	●	●	●	●	●	●	●	●	●
		VBGW 110304S01035SET 110308S01035SET	VBGW 110304SE-T 110308SE-T	S01035	0.4	2.0	1		●							●				
		VBGW 160404S01035SET 160408S01035SET	VBGW 160404SE-T 160408SE-T	S01035	0.8	1.7				●							●			
		VCGW 080202T00815ME 080204T00815ME 080208T00815ME	VCGW 080202ME 080204ME 080208ME	T00815	0.2	2.0	2	●	●	●	●	●	●	●	●	●	●	●	●	
		VCGW 080202S01035MET 080204S01035MET 080208S01035MET	VCGW 080202ME-T 080204ME-T 080208ME-T	S01035	0.4	2.0			●	●	●	●	●	●	●	●	●	●	●	●
					0.8	1.7			●	●	●	●	●	●	●	●	●	●	●	●
		VCGW 080202T00815SE 080204T00815SE	VCGW 080202SE 080204SE	T00815	0.2	2.4	1	●	●	●	●	●	●	●	●	●	●	●	●	
					0.4	2.0			●	●	●	●	●	●	●	●	●	●	●	●
		VCGW 080204S01035SET 080208S01035SET	VCGW 080204SE-T 080208SE-T	S01035	0.4	2.0	1									●				
					0.8	1.8											●			

Ref. to the table below

E36
F51
F53

Insert Description	Ref. to Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F51,F53
VB..1604 type	E30,E31,F51,F53

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.



80° Trigon / Positive

Description	A	T	φd	α
WBGW 0601_	3.97	1.59	2.3	5°
0802_	4.76	2.38		


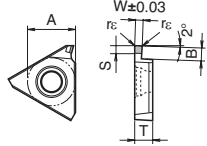
Edge Prep.				K											Ref. to Page for Applicable Toolholders				
Symbol	Cutting Edge Spec.	Example																	
F	Sharp Edge	F	Sharp Edge	K	Gray Cast Iron (With Scale)										F55				
E	Honed Cutting Edge	E008	R0.08mm Honed		Gray Cast Iron (Without Scale)														
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Nodular Cast Iron (With Scale)														
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	H	Hard Materials (Roughing)														
					Hard Materials (Finishing)														
					Hard Materials (Chip Control)														
					Sintered Steel														
Insert		Description		(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN					
						r _ε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525
			WBGW 060102T00815L-SE	WBGW 060102L-SE	T00815	0.2	1.9	1	L	L						L	L		
			WBGW 060104T00815L-SE	WBGW 060104L-SE	T00815	0.4	1.9	1	L	L							L	L	
			WBGW 080202T00815L-SE	WBGW 080202L-SE	T00815	0.2	2.3	1	L	L						L	L		
			WBGW 080204T00815L-SE	WBGW 080204L-SE	T00815	0.4	2.3	1	L	L							L	L	
			WBGW 060102S01035LSET	WBGW 060102L-SE-T	S01035	0.2	1.9	1	L	L									
			WBGW 060104S01035LSET	WBGW 060104L-SE-T	S01035	0.4	1.9	1	L	L							L		
			WBGW 080202S01035LSET	WBGW 080202L-SE-T	S01035	0.2	2.3	1	L	L									
			WBGW 080204S01035LSET	WBGW 080204L-SE-T	S01035	0.4	2.3	1	L	L							L		

60° Triangle / Positive without Hole


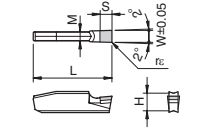
Description	A	T	φd	α
TBGN 0601_	3.97	1.59	-	5°
TPGN 1103_	6.35	3.18		-
1603_	9.525			

Edge Prep.				K											Ref. to Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example																		
F	Sharp Edge	F	Sharp Edge	K	Gray Cast Iron (With Scale)										-					
E	Honed Cutting Edge	E008	R0.08mm Honed		Gray Cast Iron (Without Scale)															
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Nodular Cast Iron (With Scale)															
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	H	Hard Materials (Roughing)															
					Hard Materials (Finishing)															
					Hard Materials (Chip Control)															
					Sintered Steel															
Insert		Description		(Previous Description)	Edge Prep.	Dimension (mm)		No. of Edges	MEGACOAT CBN					CBN						
						r _ε	S		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M		KBN70M	KBN510	KBN525	KBN65B
			TBGN 060104F	-	F	0.4	-	3												
			TBGN 060102T00815	TBGN 060102	T00815	0.2	-	3	●								●	●		
			TBGN 060104T00815	TBGN 060104	T00815	0.4	-	3	●								●	●		
			TBGN 060108T00815	TBGN 060108	T00815	0.8	-	3	●								●	●		
			TPGN 110302T00815ME	TPGN 110302ME	T00815	0.2	2.6	3												
			TPGN 110304T00815ME	TPGN 110304ME	T00815	0.4	2.5	3												
			TPGN 110308T00815ME	TPGN 110308ME	T00815	0.8	2.4	3												
			TPGN 110302T00815SE	TPGN 110302SE	T00815	0.2	2.6	1									●	●		
			TPGN 110304T00815SE	TPGN 110304SE	T00815	0.4	2.5	1											●	●
			TPGN 110308T00815SE	TPGN 110308SE	T00815	0.8	2.4	1									●	●		
			TPGN 160302T00815SE	TPGN 160302SE	T00815	0.2	2.6	1											●	●
			TPGN 160304T00815SE	TPGN 160304SE	T00815	0.4	2.4	1										●	●	
			TPGN 160308T00815SE	TPGN 160308SE	T00815	0.8	2.1	1												●
			TPGN 110304S01035SET	TPGN 110304SE-T	S01035	0.4	2.5	1												
			TPGN 110308S01035SET	TPGN 110308SE-T	S01035	0.8	2.4	1												
			TPGN 160304S01035SET	TPGN 160304SE-T	S01035	0.4	2.4	1												
			TPGN 160308S01035SET	TPGN 160308SE-T	S01035	0.8	2.1	1												


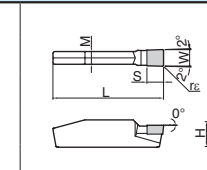
Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (With Scale)		No. of Edges	CBN		Ref. to Page for Applicable Toolholders						
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)			KBN510	KBN525							
F	Sharp Edge	F	Sharp Edge	H	Nodular Cast Iron (With Scale)				G13 G15 G62							
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Roughing)											
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Hard Materials (Finishing)		○	●								
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)												
				Sintered Steel												
Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm)						No. of Edges	CBN				
Handed Insert shows Right-hand					W	B	r _ε	A	T	φd	S			KBN510	KBN525	
		GBA43% 125-020	GBA43% 125	E008	1.25	2.0							1	●	●	
		150-020	150	E008	1.50	3.5									●	●
		200-020	200	E008	2.00	3.5	0.2	12.70	4.76	5.5	1.9				●	●
		250-020	250	E008	2.50	4.0									●	●
		300-020	300	E008	3.00	4.0									●	●

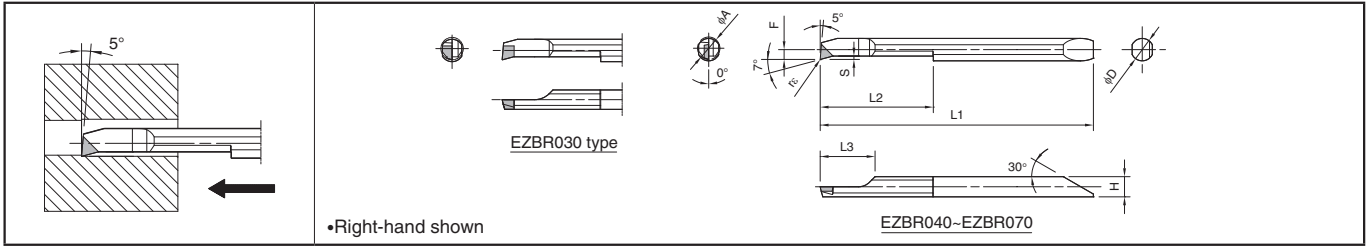
Deep Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (With Scale)		No. of Edges	CBN		Ref. to Page for Applicable Toolholders						
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)			KBN510	KBN525							
F	Sharp Edge	F	Sharp Edge	H	Nodular Cast Iron (With Scale)				G40,G41 G40 G41 G42 G40,G41							
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Roughing)											
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Hard Materials (Finishing)		○	●								
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)												
				Sintered Steel												
Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm)						No. of Edges	CBN				
					W	r _ε	L	H	M	S				KBN510	KBN525	
		GMN 2	-	E008	2.0	0.2			1.8				1	●	●	
		3	-	E008	3.0				2.3						●	●
		4	-	E008	4.0	0.4	20	4.3	3.3	2.9					●	●
		5	-	E008	5.0					4.2					●	●
		6	-	E008	6.0					5.2					●	●

Deep Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (With Scale)		No. of Edges	MEGA CBN	CBN	Ref. to Page for Applicable Toolholders							
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)			KBN05M	KBN570								
F	Sharp Edge	F	Sharp Edge	H	Nodular Cast Iron (With Scale)				G27 G31 G28 G31								
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Roughing)												
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Hard Materials (Finishing)		●										
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)													
				Sintered Steel			●										
Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm)						No. of Edges	MEGA CBN	CBN				
					W	r _ε	M	L	H	S				KBN05M	KBN570		
		GDGS 2020N-020NB		E008	2.0		0.2	1.8					1	●	●		
		3020N-040NB		E008	3.0			0.4	2.3						●	●	
		4020N-040NB		E008	4.0	±0.03			0.4	3.3	20	4.3	2.9			●	●
		5020N-040NB		E008	5.0				0.4	4.2					●	●	
		6020N-040NB		E008	6.0				0.4	5.2					●	●	

EZ Bars (EZB-NB:CBN) NEW



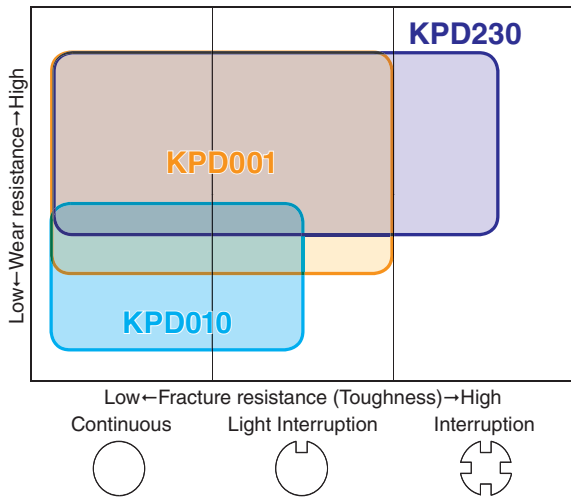
EZ Bars Dimensions

Edge Prep.		Example		K	Material		No. of Edges		Ref. to Page for Applicable Sleeve					
Symbol	Cutting Edge Spec.	Symbol	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Gray Cast Iron (With Scale)	Nodular Cast Iron (With Scale)						
F	Sharp Edge	F	Sharp Edge	H	Hard Materials (Roughing)				F20 F25					
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Finishing)									
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Hard Materials (Chip Control)									
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Sintered Steel										
Description		Edge Prep.	Min. Bore Dia.	Dimension (mm)						No. of Edges	CBN			
			phi A	phi D	H	L1	L2	L3	F	S	r epsilon		KBN05M	
EZBR	030030-003NB	T00815	3	3	2.6	38.8	13	6.8	1.25	0.3	0.035 ±0.015	1	●	
	040040-003NB	T00815	4	4	3.6	48.8	20	9.8	1.75	0.5			●	
	050050-003NB	T00815	5	5	4.6	58.1	25	9.8	2.25	0.5			●	
	060060-003NB	T00815	6	6	5.6	66.1	30	11.8	2.75	0.5			●	
	070070-003NB	T00815	7	7	6.6	74.1	35	11.8	3.25	0.5			●	

Tip-Bars

Edge Prep.		Example		K	Material		No. of Edges		Ref. to Page for Applicable Sleeve								
Symbol	Cutting Edge Spec.	Symbol	Example		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Gray Cast Iron (With Scale)	Nodular Cast Iron (With Scale)									
F	Sharp Edge	F	Sharp Edge	H	Hard Materials (Roughing)				F76								
E	Honed Cutting Edge	E008	R0.08mm Honed		Hard Materials (Finishing)												
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge		Hard Materials (Chip Control)												
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge	Sintered Steel													
Insert		Description	(Previous Description)	Edge Prep.	Min. Bore Dia.	Dimension (mm)						No. of Edges	CBN				
Handed Insert shows Right-hand					phi A	phi D	H	L1	L2	L3	F	S	r epsilon		KBN510 KBN525		
		PSBR	0303-50NBS	-	T00815	3	2.8	-	50	25	7	1.4	0.15	0.05	1	●	●
			0404-60NBS	-	T00815	4	3.8	3.6	60	30	10	1.9	0.3			●	●
			0505-70NBS	-	T00815	5	4.8	4.4	70	40		2.4	0.5			●	●
			0606-70NBS	-	T00815	6	5.8	5.2	70	45	12	2.9	0.5			●	●
			0707-80NBS	-	T00815	7	6.8	6.2	80	50		3.4				●	●

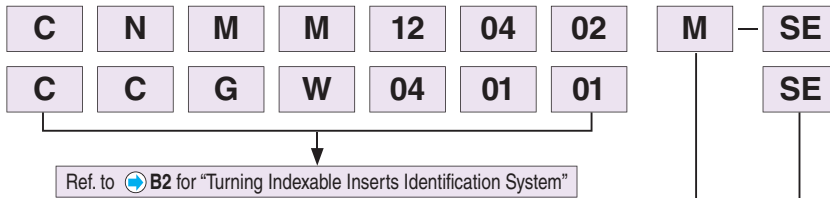
Application Map



About Insert Grades

Grades	Applications	Features
KPD001 (Ave. Grain Size under 1 μ m)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of glass fiber and plastics Machining of carbide 	<ul style="list-style-type: none"> The world highest level micro-grain diamond High edge strength, and superior to wear resistance, fracture resistance and edge sharpening performance
KPD010 (Ave. Grain Size 10 μ m)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of glass fiber and plastics Machining of carbide 	<ul style="list-style-type: none"> Good balance of wear resistance and flexural strength General purpose
KPD230 (Mixture of fine grain with the ave. grain size 2-30 μ m and rough grain)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of glass fiber and plastics 	<ul style="list-style-type: none"> High density PCD with mixture of rough and fine grains features excellent abrasive wear resistance and fracture resistance.
KPD250 (Ave. Grain Size 25 μ m) (Made to order)	<ul style="list-style-type: none"> High speed machining of high silicon aluminium alloy Machining of carbide 	<ul style="list-style-type: none"> Rough grain PCD (Ave. Grain Size 25μm) Superior to wear resistance

Identification System (Turning Insert)



Insert Type	Description	Manufacturer's Option 1	Manufacturer's Option 2	Series Name	Length of cutting edge	No. of Edges	re-grinding
Negative	CNMM120402M-SE	M	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CNMM120402M-NE	(Indicates the tool is for negative inserts/toolholders)	NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CNMM120402M		No Indication	-	Long	1	
Positive	CCGW040101SE	-	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CCGW040101NE		NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CCGW040101		No Indication	-	Long	1	

- Note) 1. No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge prep. are sharp edge.
 2. "M" in manufacturer's option 1 indicates the inserts are applicable to negative toolholders.
 3. Ref. to page B3 for insert color.

About re-grinding

- Regrinding is possible with the inserts with "NE" and no symbol in manufacturer's option 2. Regrinding can not be available depending on the edge condition.
- Regrinding is not recommended for inserts with "SE" in manufacturer's option 2.

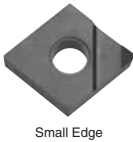
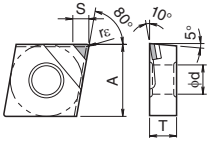
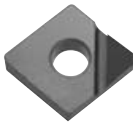
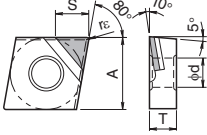
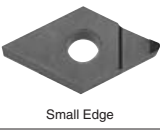
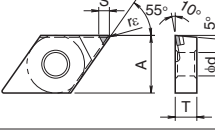
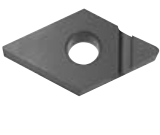
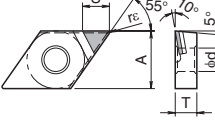

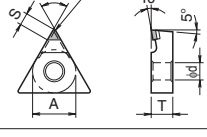
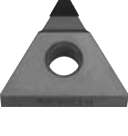
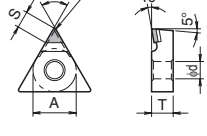
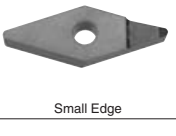
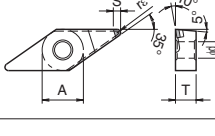

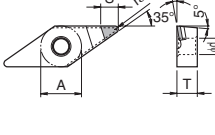

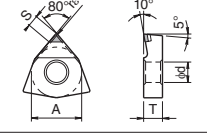
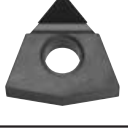
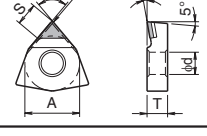
Recommended Cutting Conditions (Turning)

Workpiece Material	Insert Grades		Cutting Conditions				Remarks
	KPD001	KPD010	Cutting speed (m/min)	ap (mm)		Feed Rate (mm/rev)	
				Small Edge and Positive (Inserts)	Negative (Inserts)		
Aluminum alloys Zinc alloys	★	☆	300~1500	~1.0	~2.0	0.03~0.5	Both Dry and Coolant Cutting Available
Copper, Brass, Bronze	★	☆	300~1000	~1.0	~2.0	0.03~0.5	
Magnesium Alloys	★	☆	400~1200	~1.0	~2.0	0.03~0.5	
Carbide	★	☆	10~30	~0.3	~0.3	0.03~0.1	
Titanium Alloys	★	☆	100~200	~1.0	~2.0	0.05~0.2	Coolant
Glass fiber reinforced plastics Carbon fiber	★	☆	100~600	~1.0	~2.0	0.05~0.5	Dry
Silica Filling Plastic Particle Board	★	☆	400~800	~1.0	~2.0	0.05~0.5	

★: 1st Recommendation ☆: 2nd Recommendation



Negative

Edge Prep.		PCD all items		Sharp Edge		Dimension (mm)					Angle (°)	No. of Edges	PCD				Ref. to Page for Applicable Toolholders
						A	T	φd	rε	S			α	KPD001	KPD010	KPD230	
Insert	Description	N		S													
		Non-ferrous Metals (with interruption)		Non-ferrous Metals (without interruption)		Titanium Alloys (with interruption)		Titanium Alloys (without interruption)									
 Small Edge		CNMM	120402M-SE	12.70	4.76	5.16	0.2	2.8	-	1	●	●					
			120404M-SE				0.4	2.8			●	●					
			120408M-SE				0.8	2.7			●	●					
 Small Edge		CNMM	120402M-NE	12.70	4.76	5.16	0.2	5.1	-	1	●						
			120404M-NE				0.4	5.0			●						
			120408M-NE				0.8	4.9			●						
		CNMM	120402M				0.2	5.8			●	●					
			120404M				0.4	5.8			●	●					
			120408M				0.8	5.7			●	●					
120412M	1.2	5.6		●													
 Small Edge		DNMM	150402M-SE	12.70	4.76	5.16	0.2	2.8	-	1	●	●					
			150404M-SE				0.4	2.6			●	●					
			150408M-SE				0.8	2.2			●	●					
 Small Edge		DNMM	150402M-NE	12.70	4.76	5.16	0.2	5.2	-	1	●						
			150404M-NE				0.4	5.0			●						
			150408M-NE				0.8	4.6			●						
		DNMM	150402M				0.2	5.9			●	●					
			150404M				0.4	5.8			●	●					
			150408M				0.8	5.4			●	●					
150412M	1.2	5.0		●													
 Small Edge		TNMM	160402M-SE	9.525	4.76	3.81	0.2	2.7	-	1	●	●					
			160404M-SE				0.4	2.6			●	●					
			160408M-SE				0.8	2.3			●	●					
 Small Edge		TNMM	160402M-NE	9.525	4.76	3.81	0.2	3.2	-	1	●						
			160404M-NE				0.4	3.1			●						
			160408M-NE				0.8	2.8			●						
		TNMM	160402M				0.2	3.8			●	●					
			160404M				0.4	3.6			●	●					
			160408M				0.8	3.3			●	●					
160412M	1.2	3.0		●													
 Small Edge		VNMM	160402M-SE	9.525	4.76	3.81	0.2	2.9	-	1	●	●					
			160404M-SE				0.4	2.5			●	●					
			160408M-SE				0.8	1.6			●	●					
 Small Edge		VNMM	160402M-NE	9.525	4.76	3.81	0.2	4.7	-	1	●						
			160404M-NE				0.4	4.2			●						
			160408M-NE				0.8	3.4			●						
		VNMM	160402M				0.2	5.3			●	●					
			160404M				0.4	4.8			●	●					
			160408M				0.8	4.0			●	●					
160412M	1.2	3.1		●													
 Small Edge		WNMM	080402M-SE	12.70	4.76	5.16	0.2	2.8	-	1	●	●					
			080404M-SE				0.4	2.8			●	●					
			080408M-SE				0.8	2.7			●	●					
 Small Edge		WNMM	080402M-NE	12.70	4.76	5.16	0.2	5.0	-	1	●						
			080404M-NE				0.4	5.0			●						
			080402M				0.2	5.8				●					
080404M	0.4	5.8		●													

SE: Small Edge / NE: New Value Edge.

*Thickness of CC_0401_ are different

Positive

Edge Prep.				Dimension (mm)					Angle (°)	No. of Edges	PCD				Ref. to Page for Applicable Toolholders			
PCD all items	Sharp Edge	Insert	Description	A	T	φd	rε	S	α		KPD001	KPD010	KPD230	KPD250				
			CCGW 040101SE NEW 040102SE 040104SE	4.3	1.8	2.3	0.1 0.2 0.4	1.3 1.3 1.3	7°	1	●				F17 F37			
			CCGW 060201SE NEW 060202SE 060204SE	6.35	2.38	2.8	0.1 0.2 0.4	2.3 2.3 2.3			7°	1	●					Ref. to the table below
			CCGW 09T302SE NEW 09T304SE 09T308SE	9.525	3.97	4.4	0.2 0.4 0.8	2.7 2.7 2.7					7°	1		●		
			*CCGW 040101NE 040102NE 040104NE	4.3	1.8	2.3	0.1 0.2 0.4	1.7 1.6 1.6	7°	1					●			
			CCGW 060201NE 060202NE 060204NE	6.35	2.38	2.8	0.1 0.2 0.4	3.1 3.0 3.0			7°	1			●			
			CCGW 09T301NE 09T302NE 09T304NE 09T308NE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3					7°	1	●			
			*CCGW 040101 040102 040104	4.3	1.8	2.3	0.1 0.2 0.4	1.9 1.9 1.9	7°	1					●	●		
			CCGW 060201 060202 060204	6.35	2.38	2.8	0.1 0.2 0.4	3.5 3.5 3.5			7°	1			●	●		
			CCGW 09T301 09T302 09T304 09T308	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.8 3.8 3.7 3.6					7°	1	●	●		
			CCMT 060202SE NEW 060204SE	6.35	2.38	2.8	0.2 0.4	2.2 2.2	7°	1					●			
			CCMT 09T301SE NEW 09T302SE 09T304SE 09T308SE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	2.7 2.7 2.7 2.7			7°	1			●			
			CCMT 060201NE 060202NE 060204NE	6.35	2.38	2.8	0.1 0.2 0.4	2.8 2.8 2.8					7°	1	●			
			CCMT 09T301NE 09T302NE 09T304NE 09T308NE	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3	7°	1					●			
			CCMT 060201 060202 060204	6.35	2.38	2.8	0.1 0.2 0.4	3.3 3.3 3.2			7°	1			●	●		
			CCMT 09T301 09T302 09T304 09T308	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.9 3.9 3.9 3.8					7°	1	●	●		

SE: Small Edge / NE: New Value Edge.

Insert Description	Ref. to Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F37
CC..09T3 type	E22,E23,E34,F37,F62



PCD


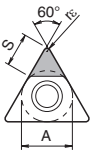
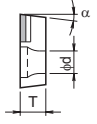

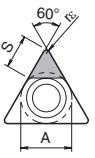
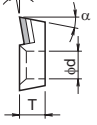

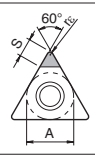
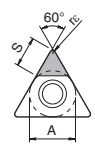
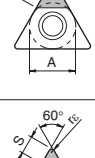
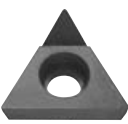
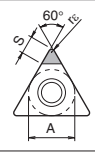
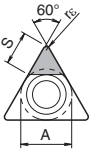
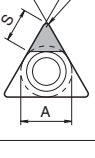
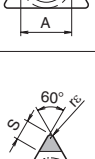

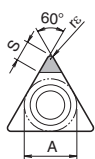
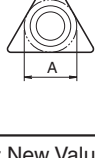
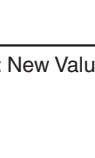
Positive

Edge Prep.		Material		Dimension (mm)					Angle (°)	No. of Edges	PCD				Ref. to Page for Applicable Toolholders
		N	S	A	T	φd	rε	S			α	KPD001	KPD010	KPD230	
Insert	Description	PCD all items		Sharp Edge											
		Handed Insert shows Left-hand													
	 CPMH 090302SE 090304SE	9.525	3.18	4.5	0.2	2.7	11°	1	●				F39		
									●						
	 CPMH 080202NE 080204NE	7.94	2.38	3.5	0.2	3.2	11°	1	●						
									●						
									●						
	 CPMH 090301NE 090302NE 090304NE 090308NE	9.525	3.18	4.5	0.1	3.4	11°	1	●						
									●						
									●						
	 CPMH 080201 080202 080204	7.94	2.38	3.5	0.1	3.7	11°	1	●	●					
									●	●					
									●	●					
	 CPMH 090301 090302 090304 090308	9.525	3.18	4.5	0.2	3.9	11°	1	●	●					
									●	●					
									●	●					
		 DCMT 070201SE 070202SE 070204SE	6.35	2.38	2.8	0.1	2.7	7°	1	●				Ref. to the table below	
●															
●															
 DCMT 11T301SE 11T302SE 11T304SE 11T308SE		9.525	3.97	4.4	0.1	2.7	7°	1	●						
									●						
									●						
									●						
 DCMT 070201NE 070202NE 070204NE		6.35	2.38	2.8	0.1	3.4	7°	1	●						
									●						
									●						
 DCMT 11T301NE 11T302NE 11T304NE 11T308NE		9.525	3.97	4.4	0.1	3.4	7°	1	●						
									●						
									●						
									●						
 DCMT 070201 070202 070204		6.35	2.38	2.8	0.1	4.0	7°	1	●	●					
	●								●						
	●								●						
 DCMT 11T301 11T302 11T304 11T308	9.525	3.97	4.4	0.2	3.9	7°	1	●	●						
								●	●						
								●	●						
	DCMT 070202 ^β /L-NE 070204 ^β /L-NE	6.35	2.38	2.8	0.2	3.3	7°	1	●						
	●														
	DCMT 11T302 ^β /L-NE 11T304 ^β /L-NE								9.525	3.97	4.4	0.2	3.3	7°	1
●															

· SE: Small Edge / NE: New Value Edge.

Insert Description	Ref. to Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

Positive

Edge Prep.				N		S						Ref. to Page for Applicable Toolholders
PCD all items		Sharp Edge		Non-ferrous Metals (with interruption)		Non-ferrous Metals (without interruption)		Titanium Alloys (with interruption)		Titanium Alloys (without interruption)		
Insert	Description	Dimension (mm)					Angle (°)	No. of Edges	PCD			
		A	T	φd	rε	S	α		KPD001	KPD010	KPD230	KPD250
	 TBGW 060102NE 060104NE	3.97	1.59	2.3	0.2	2.1	5°	1	●			
	 TBGW 060102 060104				0.4	1.9			●	●		
					0.2	2.4			●	●		
	 TBMT 060101NE 060102NE 060104NE 060108NE	3.97	1.59	2.3	0.1	2.2	5°	1	●			
					0.2	2.1			●			
					0.4	2.0			●			
					0.8	1.7			●			
	 TBMT 060101 060102 060104 060108				0.1	2.6			●	●		
					0.2	2.5			●	●		
	0.4	2.3	●	●								
	0.8	2.0	●	●								
	 TCGW 110302SE 110304SE	6.35	3.18	2.8	0.2	2.5	7°	1		●		
					0.4	2.4				●		
	 TCGW 110302NE 110304NE				0.2	3.3			●			
					0.4	3.2			●			
	 TCGW 110302 110304				0.2	3.9				●		
					0.4	3.7				●		
	 TCMT 110301SE 110302SE 110304SE	6.35	3.18	2.8	0.1	2.6	7°	1		●		
					0.2	2.5				●		
					0.4	2.4				●		
	 TCMT 080202NE 110302NE 110304NE	4.76	2.38	2.3	0.2	2.1	7°	1	●			
		6.35	3.18	2.8	0.2	3.4			●			
	 TCMT 080202 080204	4.76	2.38	2.3	0.2	2.4	7°	1		●		
		6.35	2.38	2.8	0.4	2.2				●		
	 TCMT 110302	6.35	2.38	2.8	0.2	3.9		1		●		
	 TPGB 090202SE 090204SE 090208SE	5.56	2.38	3.0	0.2	2.1	11°	1	●			
					0.4	2.1			●			
					0.8	2.1			●			
	 TPGB 110301SE 110302SE 110304SE	6.35	3.18	3.3	0.1	2.7			●	●		
		6.35	3.18	3.3	0.2	2.6			●	●		
		6.35	3.18	3.3	0.4	2.5			●	●		
	 TPGB 160302SE 160304SE	9.525	3.18	4.5	0.2	2.6			●	●		
	9.525	3.18	4.5	0.4	2.4	●	●					

· SE: Small Edge / NE: New Value Edge.

Insert Description	Ref. to Page for Applicable Toolholders
TP..0802type	E29,F49
TP..0902 type	F47,F49


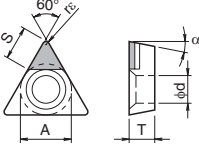

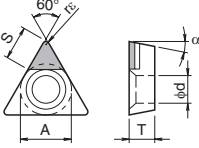
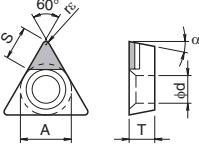

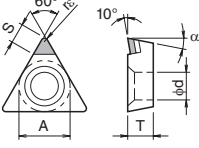

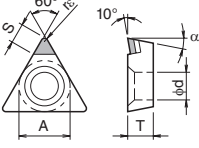
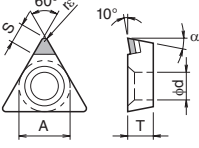
Insert Description	Ref. to Page for Applicable Toolholders
TP..1103 type	E29,F47,F48
TP..1603 type	F47,F48

● : Std. Item (1 pc boxes) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.




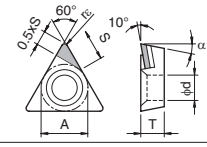
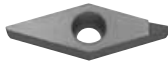
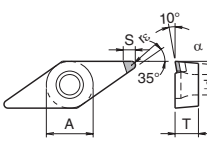
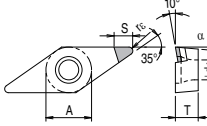
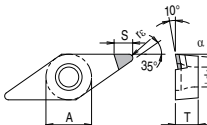
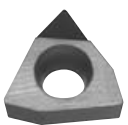
Positive

Edge Prep.		Material		Dimension (mm)					Angle (°)	No. of Edges	PCD				Ref. to Page for Applicable Toolholders		
		N	S	A	T	φd	rε	S			α	KPD001	KPD010	KPD230		KPD250	
PCD all items		Sharp Edge		Insert		Description											
 				TPGB	080202NE	4.76	2.38	2.5	0.2	2.2	11°	1	●				Ref. to the table below C25
					080204NE	4.76	2.38	2.5	0.4	2.1			●				
					080208NE				0.8	1.8			●				
				TPGB	090202NE	5.56	2.38	3.0	0.2	2.7			●				
					090204NE				0.4	2.6			●				
					090208NE				0.8	2.3			●				
				TPGB	110302NE	6.35	3.18	3.3	0.2	3.4			●				
					110304NE				0.4	3.3			●				
					110308NE				0.8	3.0			●				
				TPGB	160304NE	9.525	3.18	4.5	0.4	3.2			●				
					160308NE				0.8	2.9			●				
				TPGB	080202	4.76	2.38	2.5	0.2	2.6			●	●			
					080204				0.4	2.4			●	●			
				TPGB	090202	5.56	2.38	3.0	0.2	3.2			●	●			
	090204				0.4	3.0	●	●									
TPGB	110302	6.35	3.18	3.3	0.2	3.9	●	●									
	110304				0.4	3.7	●	●									
	110308				0.8	3.4	●	●									
 				TPMH	080202SE	4.76	2.38	2.5	0.2	2.0	11°	1	●				Ref. to the table below C25
					080204SE	4.76	2.38	2.5	0.4	1.8			●				
				TPMH	090202SE	5.56	2.38	3.0	0.2	2.4			●				
					090204SE				0.4	2.2			●				
				TPMH	110301SE	6.35	3.18	3.3	0.1	2.7			●	●			
					110302SE				0.2	2.6			●	●			
					110304SE				0.4	2.5			●	●			
				TPMH	160302SE	9.525	3.18	4.5	0.2	2.6			●	●			
					160304SE				0.4	2.4			●	●			
				TPMH	080201NE	4.76	2.38	2.5	0.1	2.3			●				
					080202NE				0.2	2.2			●				
					080204NE				0.4	2.1			●				
				TPMH	090201NE	5.56	2.38	3.0	0.1	2.7			●				
					090202NE				0.2	2.6			●				
					090204NE				0.4	2.5			●				
					090208NE				0.8	2.2			●				
				TPMH	110301NE	6.35	3.18	3.3	0.1	3.4			●				
					110302NE				0.2	3.3			●				
					110304NE				0.4	3.2			●				
					110308NE				0.8	2.9			●				
				TPMH	160304NE	9.525	3.18	4.5	0.4	3.3			●				
					160308NE				0.8	3.0			●				
				TPMH	080201	4.76	2.38	2.5	0.1	2.6			●	●			
					080202				0.2	2.5			●	●			
	080204				0.4	2.3	●	●									
TPMH	090201	5.56	2.38	3.0	0.1	3.0	●	●									
	090202				0.2	2.9	●	●									
	090204				0.4	2.8	●	●									
	090208				0.8	2.5	●	●									
TPMH	110301	6.35	3.18	3.3	0.1	3.9	●	●									
	110302				0.2	3.9	●	●									
	110304				0.4	3.7	●	●									
	110308				0.8	3.4	●	●									
TPMH	160302	9.525	3.18	4.5	0.2	4.0	●	●									
	160304				0.4	3.8	●	●									
	160308				0.8	3.6	●	●									

SE: Small Edge / NE: New Value Edge.

CBN & PCD Inserts are sold in 1 piece boxes.

Positive

Edge Prep.				N		S						Ref. to Page for Applicable Toolholders					
PCD all items		Sharp Edge		Non-ferrous Metals (with interruption)		Non-ferrous Metals (without interruption)		Titanium Alloys (with interruption)		Titanium Alloys (without interruption)							
Insert	Description	Dimension (mm)					Angle (°)	No. of Edges	PCD								
		A	T	φd	rε	S	α		KPD001	KPD010	KPD230	KPD250					
		TPMH	110302L-NE 110304L-NE	6.35	3.18	3.3	0.2 0.4	3.8 3.6	11°	1	L L					Ref. to the table below C25	
		VBMT	110301SE 110302SE 110304SE 110308SE	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.5 2.3 1.9 1.9	5°	1	●						
		VBMT	160401SE 160402SE 160404SE 160408SE	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.7 2.5 2.1 2.0			●						
		VBMT	110301NE 110302NE 110304NE 110308NE	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.6 2.4 2.0 3.1			●						
		VBMT	160401NE 160402NE 160404NE 160408NE	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.8 2.6 2.2 3.0			●						
		VBMT	110301 110302 110304 110308	6.35	3.18	2.8	0.1 0.2 0.4 0.8	3.0 2.8 2.4 3.5	5°	1	●	●					
		VBMT	160401 160402 160404 160408	9.525	4.76	4.4	0.1 0.2 0.4 0.8	3.2 3.0 2.6 3.5			●	●					
		VCMT	080202SE 080204SE 080208SE	4.76	2.38	2.3	0.2 0.4 0.8	1.4 1.4 1.4			7°	1	●				
		VCMT	080201NE 080202NE 080204NE 080208NE				0.1 0.2 0.4 0.8	1.7 1.7 1.8 1.9			7°	1	●				
		VCMT	080201 080202 080204 080208				0.1 0.2 0.4 0.8	2.0 2.0 2.1 2.2	7°	1	●	●					
			WBMT	060102L-SE	3.97	1.59	2.3	0.2	1.3	5°	1	L					
			WBMT	060101L-NE 060102L-NE 060104L-NE	3.97	1.59	2.3	0.1 0.2 0.4	1.7 1.6 1.6	5°	1	L L L				F55	
			WBMT	060101L 060102L 060104L	3.97	1.59	2.3	0.1 0.2 0.4	1.9 1.9 1.9	5°	1	L L L	L L				

SE: Small Edge / NE: New Value Edge.

Insert Description	Ref. to Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F51,F53
VB..1604 type	E30,E31,F51,F53

● : Std. Item (1 pc boxes) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

CBN & PCD Inserts are sold in 1 piece boxes.





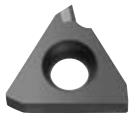



PCD

Positive

Edge Prep.		Material		Dimension (mm)					Angle (°)	No. of Edges	PCD				Ref. to Page for Applicable Toolholders
				A	T	φd	rε	S			α	KPD001	KPD010	KPD230	
PCD all items	Sharp Edge	Insert	Description												
		Handed Insert shows Left-hand													
		WBMT NEW	080202L-SE	4.76	2.38	2.3	0.2	1.6	5°	1	L				F55
		WBMT	080202L-NE	4.76	2.38	2.3	0.2	2.1	5°	1	L				
		WBMT	080204L-NE	4.76	2.38	2.3	0.2	2.1	5°	1	L				
		WBMT	080202L	4.76	2.38	2.3	0.2	2.4	5°	1	L	L			
			080204L				0.4	2.3			L	L			
		WPMT	110202SE	6.35	2.38	2.8	0.2	2.1	11°	1	●				
		WPMT	110202NE				0.2	2.7			●				
		WPMT	110202				0.2	3.1				●			
		SEGN	120304NE	12.70	3.18	-	0.4	3.6	20°	1	●				-
		SPGN	120304NE	12.70	3.18	-	0.4	3.6	11°	1	●				E42 F56
		SPGN	120304				0.4	4.2				●			
		TPGN	110301SE	6.35	3.18	-	0.1	2.6	11°	1	●				
		TPGN	110302SE				0.2	2.5			●	●			
		TPGN	110304SE				0.4	2.4			●	●			
		TPGN	160301SE	9.525	3.18	-	0.1	2.6	11°	1	●	●			
		TPGN	160302SE				0.2	2.6			●	●			
		TPGN	160304SE				0.4	2.4			●	●			
		TPGN	160304NE	9.525	3.18	-	0.4	3.2	11°	1	●				E43 F57
		TPGN	160308NE				0.8	2.9			●				
		TPGN	110302				0.2	3.9			●	●			
	TPGN	110304	6.35	3.18	-	0.4	3.7	11°	1	●	●				
	TPGN	110308				0.8	3.4			●	●				
	TPGN	160302				0.2	3.9			●	●				
	TPGN	160304				0.4	3.7			●	●				
			160308	9.525	3.18		0.8	3.4			●	●			

· SE: Small Edge / NE: New Value Edge.

Grooving Inserts (1-edge)


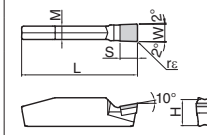
Edge Prep.																
PCD all items		Sharp Edge														
Insert Handed Insert shows Right-hand	Description	(Previous Description)	Dimension (mm)							No. of Edges	PCD				Ref. to Page for Applicable Toolholders	
			W	B	r _ε	A	T	φd	S		KPD001		KPD010			
											R	L	R	L		
 External / Internal Grooving	GBA32R 125-010 150-010 GBA43^{R/L} 125-010 150-010 200-010 250-010 300-010	GBA32R 125 150 GBA43^{R/L} 125 150 200 250 300	1.25 1.50 1.25 1.50 2.00 2.50 3.00	2.0 2.0 3.5 4.0 4.0	0.1 0.1 0.1 0.1 0.1	9.525 9.525 12.70 12.70 12.70	3.18 3.18 4.76 4.76 4.76	4.4 4.4 5.5 5.5 5.5	1.7 1.7 1.9 1.9 1.9	1	●	●	●	●	G13 G15 G62	
	 External Grooving	GB43^{R/L} 125 150 200 250 300	- - - - -	1.25 1.50 2.00 2.50 3.00	2.0 3.5 4.0 4.0	0.1 0.1 0.1 0.1	12.70 12.70 12.70 12.70	4.76 4.76 4.76 4.76	- - - -	1.9 1.9 1.9 1.9	1	□	□	□	□	G15
	 External Grooving	TGF32R 125-010 150-010 200-010	- - -	1.25 1.50 2.00	2.0 2.5	0.1 0.1 0.1	9.525 9.525 9.525	3.18 3.18 3.18	4.5 4.5 4.5	1.7 1.7 1.9	1	●	●	●	●	G16 G17
	Insert Handed Insert shows Right-hand	Description	(Previous Description)	Dimension (mm)						No. of Edges	PCD				Ref. to Page for Applicable Toolholders	
				W	B	r _ε	A	L	H		KPD001		KPD010			
	 Internal Grooving	GV^{R/L} 145-020A 200-020A 300-020A GV^{R/L} 200-020B 250-020B 300-020B GV^{R/L} 300-020C 400-020C	GV^{R/L} 145A 200A 300A GV^{R/L} 200B 250B 300B GV^{R/L} 300C 400C	1.45 2.00 3.00 2.00 2.50 3.00 3.00 4.00	2.3 3.2 4.2 4.5	0.2 0.2 0.2 0.2	4.0 4.5 5.8 5.8	12 15 21 21	5.0 5.5 6.5 6.5	1	●	●	●	●	●	●
 Face Grooving		GVF^{R/L} 250-020B 300-020B 400-020B GVF^{R/L} 350-020C 400-020C GVF^{R/L} 350-040C 400-040C	GVF^{R/L} 250B 300B 400B - - GVF^{R/L} 350C 400C	2.50 3.00 4.00 3.50 4.00 3.50 4.00	4.8 4.8 5.3 6.8 6.8 6.8 6.8	0.2 0.2 0.2 0.2 0.2 0.4	5.8 5.8 7.0 7.0 7.0 7.0	20 20 27 27 27	5.0 5.0 7.0 7.0 7.0	1	●	●	●	●	●	G94 G97 G104
Insert		Description	(Previous Description)	Dimension (mm)					No. of Edges	PCD				Ref. to Page for Applicable Toolholders		
				W	r _ε	L	H	M		S	KPD001		KPD010			
 External Deep Grooving		GMN 2 3 4 5 6	- - - - -	2.0 3.0 4.0 5.0 6.0	0.2	20	4.3	1.8 2.3 3.3 4.2 5.2	2.9	1	●	●	●	●	●	G40,G41 G40 G41 G42 G40,G41

● : Std. Item (1 pc boxes)
 MTO : Made to order
 □ : Deleted from the next catalogue


CBN & PCD Inserts are sold in 1 piece boxes.





Deep Grooving Inserts (1-edge)

Edge Prep.				N		Non-ferrous Metals (with interruption)		●				Ref. to Page for Applicable Toolholders
PCD all items		Sharp Edge		S		Titanium Alloys (with interruption)		●				
PCD all items		Sharp Edge		S		Titanium Alloys (without interruption)		●				
Insert	Description	Dimension (mm)						No. of Edges	PCD			
		W	r _ε	M	L	H	S		KPD001			
 <p>External Deep Grooving</p>		GDGS 2020N-020NB	2.0	±0.03	0.2	1.8	20	4.3	2.9	1	●	G27 G31
		3020N-020NB	3.0		0.2	2.3					●	
		4020N-020NB	4.0		0.2	3.3					●	
		5020N-020NB	5.0		0.2	4.2					●	
		6020N-020NB	6.0		0.2	5.2					●	

For Aluminum Wheel (1-edge)

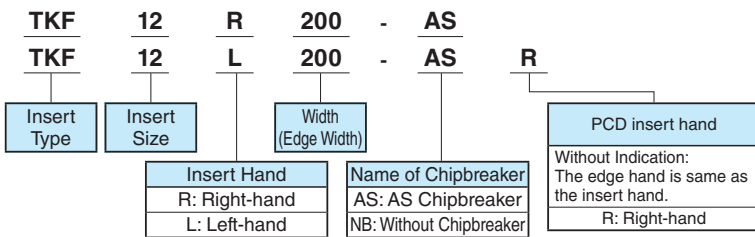
Edge Prep.				N		Non-ferrous Metals (with interruption)		●				Ref. to Page for Applicable Toolholders
GMGW		Honed Cutting Edge		S		Titanium Alloys (with interruption)		●				
GMGW		Honed Cutting Edge		S		Titanium Alloys (without interruption)		●				
Insert	Description	Dimension (mm)						No. of Edges	PCD			
		W	r _ε	L	H	M	S		KPD001	KPD010		
	GMGW 6030-30R	6	3	30	5.5	5	4.5	1	●	G46		
	8030-40R	8	4			6	6		●			
	GMGW 8030-40R-HR	8	4	30	5.5	6	5		●			

Turning / Grooving Inserts (1-edge)

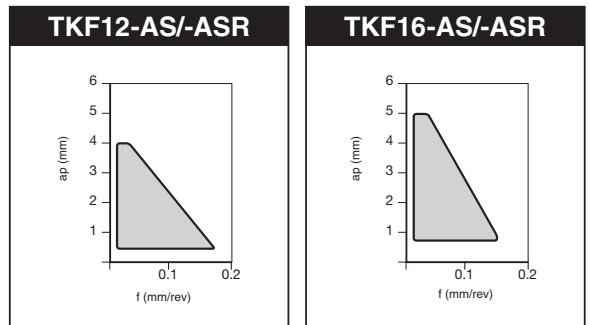
Edge Prep.		PCD all items		Sharp Edge		Dimension (mm)										Angle (°)		PCD		Ref. to Page for Applicable Toolholders
Insert	Description	W	B	r _ε	T	H	h ₁	φd	S	θ	No. of Edges	KPD001		PCD						
												R	L	R	L					
 <p>Handed Insert shows Right-hand</p> <p>Turning / Grooving</p>	TKF12 ⁹ /L	200-AS	2.0	5	+0.05 -0.1	3	8.7	7.3	5	5.5	0°	1	●	●	●	●				
		250-AS	2.5	5		4	9.5	8.0					6.5	●	●					
		TKF16 ⁹ /L	250-AS	2.5	8	+0.05 -0.1	4	9.5	8.0	6.5	0°	1	●	●	●	●				
		TKF12L	200-ASR	2.0	5		3	8.7	7.3				5.5	●	●					
		250-ASR	2.5	5	4		9.5	8.0	6.5				●	●						
		TKF16L	250-ASR	2.5	8	4	9.5	8.0	6.5	●	●									
 <p>External Grooving (Turning is possible)</p>	TKF12 ⁹ /L	150-NB	1.5	3.5	+0.05 -0.1	3	8.7	8.3	5	3.0	0°	1	●	●	●	●				
		200-NB	2.0	4									3.0	●	●					
		250-NB	2.5	4									4.5	●	●					
		250-NB4.5	2.5	5									4.5	●	●					

- * Lead angle (Front cutting edge angle: θ) shows the angle when installed in toolholder.
- * PCD Inserts of TKF type only for Turning and Grooving.
- * Cut-off is not recommended.
- * Dimension B: shows available grooving depth.

Inserts Identification System



Applicable Range



- * PCD Inserts of TKF type only for Turning and Grooving.
- * Cut-off is not recommended.

Note 1) The cutting edge of the TKF-AS/-ASR will be 1mm lower than the center line when attached to the KTKF toolholder (Ref. to Fig.1). Adjust the height by making NC lathe parameter settings or inserting a plate.

2) If the 1mm adjustment is not possible on your automatic lathe, use the TKF-NB. (Ref. to Fig.2.)

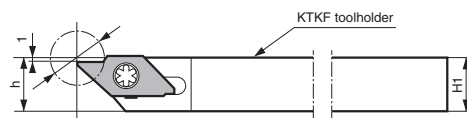


Fig.1 When a TKF-AS/-ASR insert is attached (The cutting edge is 1mm lower than the center line.)

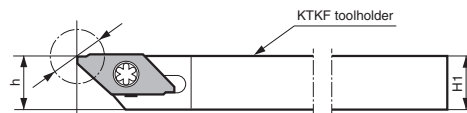
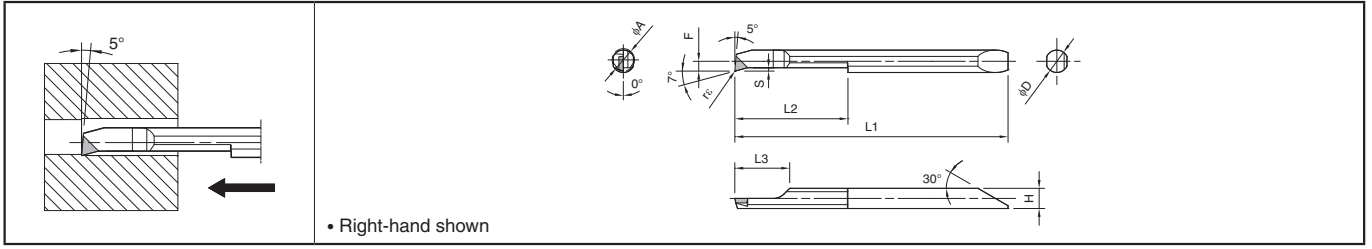


Fig.2 When a TKF-NB insert is attached

EZ Bars (EZB-NB type: PCD) NEW



EZ Bars Dimensions

N	Non-ferrous Metals (with interruption)	●	
	Non-ferrous Metals (without interruption)	●	
S	Titanium Alloys (with interruption)	●	
	Titanium Alloys (without interruption)	●	

Edge Prep.		Min. Bore Dia.	Dimension (mm)								No. of Edges	PCD		Ref. to Page for Applicable Sleeve	
PCD all items	Sharp Edge		φA	φD	H	L1	L2	L3	F	S		rε	KPD001		
EZBR	040040-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5	0.035 ^{±0.015}		1	●		F20 ? F25
	050050-003NB	5	5	4.6	58.1	25	9.8	2.25	0.5				●		
	060060-003NB	6	6	5.6	66.1	30	11.8	2.75	0.5				●		
	070070-003NB	7	7	6.6	74.1	35	11.8	3.25	0.5				●		

System Tip-Bars

Edge Prep.		Min. Bore Dia.	Dimension (mm)							No. of Edges	PCD		Ref. to Page for Applicable Toolholders
PCD all items	Sharp Edge		ϕA	H	L1	L2	F	S	r_ϵ		KPD001	KPD010	
Insert Handed Insert shows Right-hand		Description											
		VNBR 0411-02NB 0420-02NB	4	3.9	30.8 39.8	11 20	3.5	0.5	0.2	1	●	●	F28 F29
		VNBR 0511-02NB 0520-02NB	5	3.9	30.8 39.8	11 20	4.5	0.7	0.2		●	●	
		VNBR 0620-02NB 0630-02NB	6	3.9	39.8 49.8	20 30	5.3	1.0	0.2		●	●	
		VNBR 0720-02NB 0730-02NB	7	3.9	39.8 49.8	20 30	6.2	1.0	0.2		●	●	

System Tip-Bars

Edge Prep.		Min. Bore Dia.	Dimension (mm)									No. of Edges	PCD		Ref. to Page for Applicable Toolholders	
PCD all items	Sharp Edge		ϕA	W	r_ϵ	H	L1	L2	L3	F	T		KPD001	KPD010		
Insert Handed Insert shows Right-hand		Description														
		VNGR 0410-11NB 0420-11NB	4	1.0 2.0	0.05 0.10	3.9	30.8	11	0.1	3.5	0.8	1	MTO	MTO	F28 F29	
		VNGR 0510-11NB 0520-11NB	5	1.0 2.0	0.05 0.10	3.9	30.8	11	0.1	4.4	1.0		MTO	MTO		
		VNGR 0610-20NB 0620-20NB	6	1.0 2.0	0.05 0.10	3.9	39.8	20	0.3	5.2	1.8		MTO	MTO		
		VNGR 0710-20NB 0720-20NB	7	1.0 2.0	0.05 0.10	3.9	39.8	20	0.3	6.2	2.0		MTO	MTO		
		VNFGR 0820-10NB	8	2.0							2.0		1	MTO		MTO
		0830-10NB	8	3.0		0.05	3.9	39.8	10	-	7.3			MTO		MTO

Tip-Bars

Edge Prep.		Min. Bore Dia.	Dimension (mm)							No. of Edges	PCD		Ref. to Page for Applicable Sleeve		
PCD all items	Sharp Edge		ϕA	ϕD	H	L1	L2	L3	F		S	r_ϵ		KPD001	KPD010
Insert Handed Insert shows Right-hand		Description													
		PSB[®] 0404-60NBS	4	3.8	3.6	60	30	10	1.9	0.3	0.05	1	R	R	F76
		0505-70NBS	5	4.8	4.4	70	40		2.4				R	●	
		0606-70NBS	6	5.8	5.2	70	45	12	2.9	0.5			R	R	
		0707-80NBS	7	6.8	6.2	80	50		3.4				R	R	

● : Std. Item (1 pc boxes)
R : Std. Item (Right-hand Only)
MTO : Made to order

CBN & PCD Inserts are sold in 1 piece boxes.



Milling Inserts



Edge Prep.		N	Non-ferrous Metals (with interruption)										☺	☹	☹	Ref. to Page for Applicable Toolholders
PCD all items		S	Titanium Alloys (with interruption)										☺	☹	☹	
Insert	Description	Dimension (mm)					Angle (°)			No. of Edges	PCD					
		A	T	X	Z	S	α	β	γ		KPD001	KPD010	KPD230			
	SDKN 1203AUFN-NE	12.70	3.18	0.5	1.2	3.1	15°	23°	45°	1	●			M35		
	1203AUFN										●	●				
	SEEN 1203AFFN-NE	12.70	3.18	0.5	1.4	3.0	20°	25°	45°	1	●			M30		
	1203AFFN										●	●		M31		
 With Wiper Edge	SEEN 1203AFFR-W	12.50	3.18	-	3.5	1.7	B=14.56	20°	25°	45°	1	●		M32		
	SOKN 13T3AXFN-NE	13.494	3.97	0.4	1.1	3.0	27°	32°	45°	1			●	M36		
	TEEN 1603PTFR-NE	9.525	3.18	0.6	1.4	4.1	20°	22°	30°	1	●		●	M105		
	1603PTFR										●	●				
	TEKN 2204PTFR-NE	12.70	4.76	0.7	1.8	4.2	20°	22°	30°	1	●		●	M60		
	2204PTFR										●	●		M61		
Insert	Description	Dimension (mm)					Angle (°)			No. of Edges	PCD			Ref. to Page for Applicable Toolholders		
		A	T	φd	W	rε	S	α	β		KPD001	KPD010	KPD230			
	BDMT 11T302FR	6.7	3.8	2.8	11.0	0.2	3.6	18°	13°	1	●		●	M64		
	11T304FR										●		●		M65	
	BDMT 170402FR	9.6	4.9	4.4	17.0	0.2	4.4	18°	13°	1	●		●	M66		
170404FR	●											●	M67			
	NDCW 150302FRX-NE	9.525	3.18	4.4	15.0	0.2	5.1	15°	-	1	●		●	M103		
	150302FRX						5.7				●	●				