MEGACOAT CBN

Extended Tool Life | Stability | High Speed availability

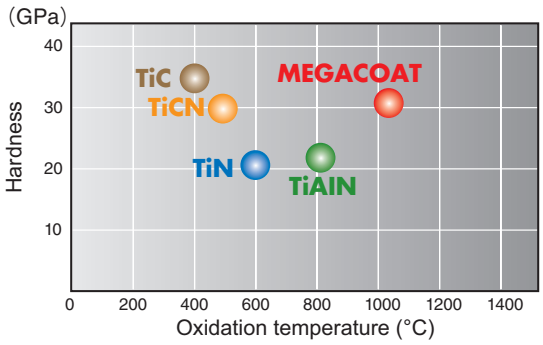
Kyocera's new innovative CBN tools.

CBN Variation and Features ➪ See page A15.

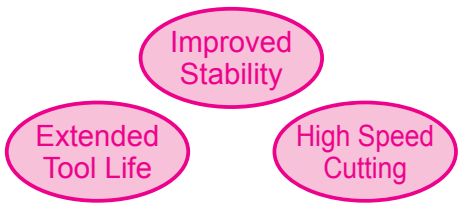
Eight grades in the lineup to accommodate a wide range of workpiece materials

MEGACOAT CBN

Properties of PVD coated layer



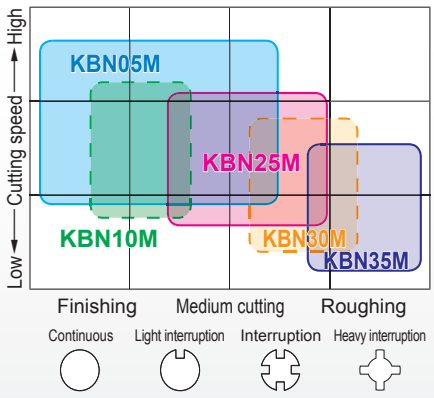
Advantages of MEGACOAT



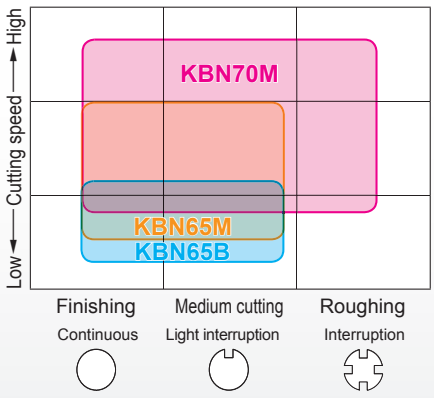
- Long tool life and stable cutting due to superior heat-resistance and hardness.
- Improvement of crater wear resistance.

Application Map

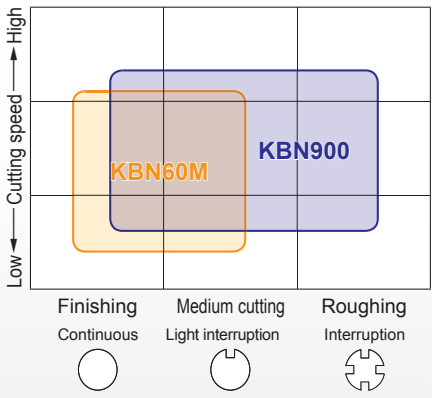
Hardened Materials



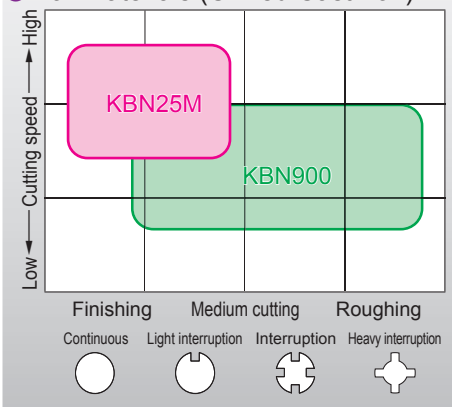
Sintered Steel



Cast Iron



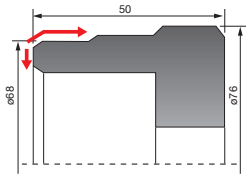
Roll Materials (Chilled Cast Iron)



Case Studies

17Cr3 (SCr420H) (58HRC)

- Gear
- External and Face machining and Chamfering
- Vc=130 m/min
- ap=0.6 mm
- f=0.12mm/rev
- WET
- CNGA120408S01225ME (KBN05M)



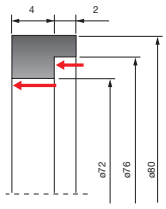
KBN05M	300 pcs/edge
Compe.A	200 pcs/edge

·KBN05M achieved 1.5 times longer tool life than Competitor A.
⇒Its longer tool life contributes to cost-cutting.

(Evaluation by the user)

15CrMo4 (SCM415) (55HRC)

- Stator
- Internal machining
- Vc=170 m/min
- ap=0.4 mm
- f=0.1mm/rev
- WET
- CNGA120408S01225ME (KBN05M)



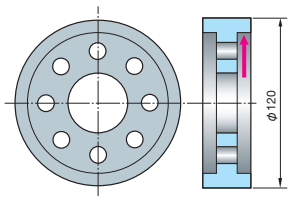
KBN05M	600 pcs/edge
Compe.B	300 pcs/edge

·KBN05M achieved twice longer tool life than Competitor B.
⇒Its longer tool life contributes to cost-cutting.

(Evaluation by the user)

25CrMo4 (SCM420) (60HRC)

- Gear Parts
- Interrupted face machining
- Vc=90m/min
- ap=0.5mm
- f=0.12mm/rev
- Wet⇒Dry
- CNGA120412S01225ME (KBN25M)



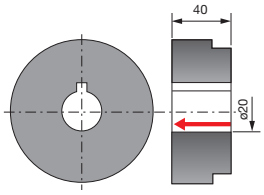
KBN25M	70 pcs/edge
Compe.C (CBN tool)	30 pcs/edge (Unstable)

KBN25M improved tool life up to 70 pieces/edge than is two times more than competitor's (CBN tool) B. Also, KBN25M has increased its tool life up to 250 pieces/edge by changing from wet machining to dry machining.

(Evaluation by the user)

25CrMo4 (SCM420) (58HRC)

- Sleeve
- Internal machining (Heavy interrupted)
- Vc=100 m/min
- ap=0.5 mm
- f=0.1mm/rev
- Wet
- TPGB110308S01035MET (KBN35M)



KBN35M	115 pcs/edge
Compe.D	100 pcs/edge

·KBN35M achieved 15% longer tool life in heavy interrupted machining compared with Competitor D.
·Furthermore it still keeps the insert tip 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)

Recommended Cutting Conditions

Workpiece Material	Hardness	Application		Insert Grade	Cutting Conditions		
					Vc (m/min)	ap (mm)	f (mm/rev)
Heat Treated Steel	Over 55HRC	General Finishing	Continuous~ Light interruption	KBN05M	100 - **150** - 200	0.05 - **0.3** - 0.5	0.05 - **0.08** - 0.1
		High Efficient Stable Cutting	Continuous~ Interruption	KBN25M	80 - **120** - 160	0.05 - **0.3** - 0.5	0.05 - **0.08** - 0.1
		Interrupted (Small ap)	Interrupted~ Heavy interruption	KBN35M	60 - **100** - 150	0.05 - **0.2** - 0.4	0.05 - **0.08** - 0.1
		Heavy Cutting	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 Cutting	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 Cutting	Continuous~ Interruption	KBN900	70 - **90** - 110	0.3 - **0.7** - 1.0	0.05 - **0.1** - 0.15
Sintered steel	Under 35HRC	Finishing	Continuous~ Light interruption	KBN65M	50 - **150** - 200	0.05 - **0.2** - 0.3	0.05 - **0.1** - 0.2
	Over 35HRC	Finishing	Continuous~ Interruption	KBN70M	100 - **200** - 250	0.05 - **0.2** - 0.3	0.05 - **0.1** - 0.2

CBN & PCD Tools Identification System

Turning Insert

● Identification System

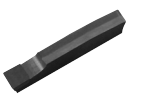
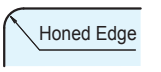
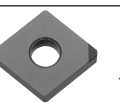
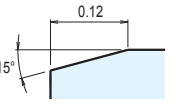
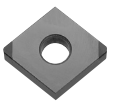
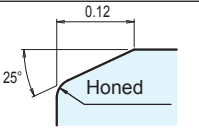
C	N	G	A	12	04	04	S01225	ME

Turning Indexable Inserts Identification System ➡ **See Page B2**

Insert Type	Example of type	*Edge Preparation	Manufacture's Option	Feature of insert		No. of Edges
				Cutting Edge Length	Strengthening of edge	
Negative	CNGA120404S01225	S01225	Without Indication	Long	Standard specification (Specification is different from materials)	1
	CNGA120404T01215	T01215				1
	CNMN120404S02020	S02020	Without Indication (Only KBN900)		Standard specification	4
	CNGA120404S01225SE	S01225	SE	Short (Small Edge)		1
	CNGA120404S01225ME	S01225	ME			2
	CNGA120404S01730SET	S01730	SET (SE-T)		Tough Edge	1
	CNGA120404S01730MET	S01730	MET (ME-T)		Tough Edge	2
	CNGM120404S00825BB1 CNGM120404S01225BB2 CNGM120404S01625BB3	S00825 S01225 S01625	BB1 BB2 BB3		With chipbeaker (Specification is different from chipbreaker)	1
Positive	CPGB090304T00815	T00815	Without Indication	Long	Standard specification	1
	CPGB090304T00815SE	T00815	SE	Short (Small Edge)		1
	CPGB090304T00815ME	T00815	ME			2
	CPGB090304S01035SET	S01035	SET (SE-T)		Tough Edge	1
	CPGB090304S01035MET	S01035	MET (ME-T)		Tough Edge	2

*No edge specification because all PCD inserts have sharp edges.
· See Page **B3** for insert color

● How to identify edge specification

Edge Preparation				
Symbol	Cutting Edge Spec.	Example		Shape
E	Honed Cutting Edge	E008	R0.08mm Honed	 External Grooving  Honed Edge
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	 Small Edge  0.12 15°
S	Chamfered + Honed Cutting Edge	S01225	0.12mm X 25° Chamfered + Honed Cutting Edge	 Multi Edge  0.12 25° Honed

80° Rhombic / Negative

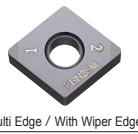
(mm)

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

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ◕: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (Without Scale)	Sintered Steel	Hard Materials (Roughing)	Hard Materials (Finishing)	Hard Materials (Chip Control)
K			●	◕	◕ ✱			
H						✱ ✱	○ ◔ ● ○ ◕	● ◕

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD Coated CBN		Ref. Page for Toolholder
 Multi Edge / With Wiper Edge	CNGA 120404S01215MEW	CNGA 120404MEW		0.4	2.6			●	●		●	●	●	●						D8 E18 F64 F68
	120408S01215MEW	120408MEW	S01215	0.8	2.5	2		●	●		●	●	●	●						
	120412S01215MEW	120412MEW		1.2	2.5			●	●		●	●	●	●						
 Multi Edge	CNGA 120402S01225ME	CNGA 120402ME		0.2	2.6			●	●	●	●	●		●	●					
	120404S01225ME	120404ME	S01225	0.4	2.5	2		●	●	●	●	●	●	●	●					
	120408S01225ME	120408ME		0.8	2.6			●	●	●	●	●	●	●	●					
	120412S01225ME	120412ME		1.2	2.5			●	●	●	●	●	●	●	●					
	CNGA 120404T01215ME	CNGA 120404ME		0.4	2.5											●	●			
	120408T01215ME	120408ME	T01215	0.8	2.6	2										●	●			
	120412T01215ME	120412ME		1.2	2.5											●	●			
 Multi Edge / Tough	CNGA 120404S01730MET	CNGA 120404ME-T		0.4	2.5				●		●	●	●	●						
	120408S01730MET	120408ME-T	S01730	0.8	2.6	2			●		●	●	●	●						
	120412S01730MET	120412ME-T		1.2	2.5				●		●	●	●	●						
 Small Edge	CNGA 120402S01225SE	CNGA 120402SE		0.2	2.6			●	●		●	●								
	120404S01225SE	120404SE	S01225	0.4	2.5	1		●	●		●	●								
	120408S01225SE	120408SE		0.8	2.6			●	●		●	●								
	120412S01225SE	120412SE		1.2	2.5				●		●	●								
	CNGA 120404T01215SE	CNGA 120404SE		0.4	2.5		●													
	120408T01215SE	120408SE	T01215	0.8	2.6	1	●													
	120412T01215SE	120412SE		1.2	2.5		●													
 Small Edge / Tough	CNGA 120404S01730SET	CNGA 120404SE-T		0.4	2.6				●			●								
	120408S01730SET	120408SE-T	S01730	0.8	2.6	1			●			●								
	120412S01730SET	120412SE-T		1.2	2.5				●			●								
	CNGA 120404S01225	CNGA 120404		0.4	3.7						□	□								
	120408S01225	120408	S01225	0.8	3.6	1					□	□								
	120412S01225	120412		1.2	3.6						□	□								
	CNGA 120404T01215	CNGA 120404		0.4	3.7		□													
	120408T01215	120408	T01215	0.8	3.6	1	□													
	120412T01215	120412		1.2	3.6		□													
 Chip Control	CNGM 120404S00825BB1	CNGM 120404BB1		0.4	1.8						●	●								
	120408S00825BB1	120408BB1	S00825	0.8	2.0	1					●	●								
	120412S00825BB1	120412BB1		1.2	2.2						●	●								
	CNGM 120404S01225BB2	CNGM 120404BB2		0.4	2.2						●	●								
	120408S01225BB2	120408BB2	S01225	0.8	2.4	1					●	●								
	120412S01225BB2	120412BB2		1.2	2.6						●	●								
	CNGM 120404S01625BB3	CNGM 120404BB3		0.4	2.6						●	●								
	120408S01625BB3	120408BB3	S01625	0.8	2.8	1					●	●								
	120412S01625BB3	120412BB3		1.2	3.0						●	●								

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

55° Rhombic / Negative

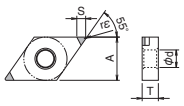
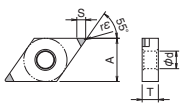
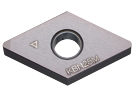
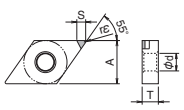
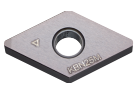
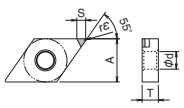
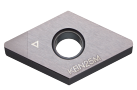
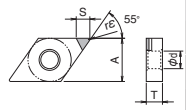
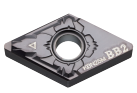
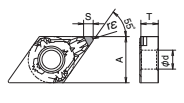
(mm)

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.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ◕: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

		KBN65B	KBN510	KBN525	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	PVD Coated CBN	
K	Gray Cast Iron (With Scale)													
	Gray Cast Iron (Without Scale)									●				
	Nodular Cast Iron (Without Scale)	◕												
	Sintered Steel										◕	✱		
H	Hard Materials (Roughing)							✱	✱					
	Hard Materials (Finishing)		○	◔	●	○	◕							
	Hard Materials (Chip Control)					●	◕							

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	Ref. Page for Toolholder
  Multi Edge	DNGA 150401S01225ME	DNGA 150401ME		0.1	2.2		D10 D11 F65
	DNGA 150402S01225ME	DNGA 150402ME		0.2	2.5		
	DNGA 150404S01225ME	DNGA 150404ME	S01225	0.4	2.3	2	
	DNGA 150408S01225ME	DNGA 150408ME		0.8	1.9		
	DNGA 150412S01225ME	DNGA 150412ME		1.2	1.9		
	DNGA 150404T01215ME	DNGA 150404ME		0.4	2.3		
	DNGA 150408T01215ME	DNGA 150408ME	T01215	0.8	1.9	2	
	DNGA 150412T01215ME	DNGA 150412ME		1.2	1.9		
	DNGA 150604S01225ME	DNGA 150604ME		0.4	2.3		
	DNGA 150608S01225ME	DNGA 150608ME	S01225	0.8	1.9	2	
	DNGA 150612S01225ME	DNGA 150612ME		1.2	1.9		
	DNGA 150604T01215ME	DNGA 150604ME		0.4	2.3		
	DNGA 150608T01215ME	DNGA 150608ME	T01215	0.8	1.9	2	
	DNGA 150612T01215ME	DNGA 150612ME		1.2	1.9		
  Multi Edge / Tough	DNGA 150404S01730MET	DNGA 150404ME-T		0.4	2.3		
	DNGA 150408S01730MET	DNGA 150408ME-T	S01730	0.8	1.9	2	
	DNGA 150412S01730MET	DNGA 150412ME-T		1.2	1.9		
	DNGA 150604S01730MET	DNGA 150604ME-T		0.4	2.3		
	DNGA 150608S01730MET	DNGA 150608ME-T	S01730	0.8	1.9	2	
	DNGA 150612S01730MET	DNGA 150612ME-T		1.2	1.9		
  Small Edge	DNGA 150401S01225SE	DNGA 150401SE		0.1	2.2		
	DNGA 150402S01225SE	DNGA 150402SE		0.2	2.5		
	DNGA 150404S01225SE	DNGA 150404SE	S01225	0.4	2.3	1	
	DNGA 150408S01225SE	DNGA 150408SE		0.8	1.9		
	DNGA 150412S01225SE	DNGA 150412SE		1.2	1.9		
	DNGA 150404T01215SE	DNGA 150404SE	T01215	0.4	2.3	1	
	DNGA 150408T01215SE	DNGA 150408SE		0.8	1.9		
	DNGA 150604S01225SE	DNGA 150604SE		0.4	2.3		
	DNGA 150608S01225SE	DNGA 150608SE	S01225	0.8	1.9	1	
	DNGA 150612S01225SE	DNGA 150612SE		1.2	1.9		
  Small Edge / Tough	DNGA 150404S01730SET	DNGA 150404SE-T		0.4	2.3		
	150408S01730SET	150408SE-T	S01730	0.8	1.9	1	
	150412S01730SET	150412SE-T		1.2	1.9		
 	DNGA 150404S01225	DNGA 150404	S01225	0.4	5.8	1	
	150408S01225	150408		0.8	5.5		
	DNGA 150404T01215	DNGA 150404	T01215	0.4	5.8	1	
	150408T01215	150408		0.8	5.5		
  Chip Control	DNGM 150404S00825BB1	DNGM 150404BB1		0.4	1.6		
	150408S00825BB1	150408BB1	S00825	0.8	1.6	1	
	150412S00825BB1	150412BB1		1.2	1.8		
	DNGM 150404S01225BB2	DNGM 150404BB2		0.4	1.8		
	150408S01225BB2	150408BB2	S01225	0.8	2.0	1	
	150412S01225BB2	150412BB2		1.2	2.1		
	DNGM 150404S01625BB3	DNGM 150404BB3		0.4	2.2		
	150408S01625BB3	150408BB3	S01625	0.8	2.5	1	
	150412S01625BB3	150412BB3		1.2	2.5		

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

90° Square / 60° Triangle / Negative

(mm)

Description	A	T	φd
SNGA 1204_	12.70	4.76	5.16
TNGA 1604_	9.525	4.76	3.81
TNGM 1604_			

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ●: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

		KBN65B	KBN510	KBN525	KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	PVD Coated CBN	
K	Gray Cast Iron (With Scale)													
	Gray Cast Iron (Without Scale)									●				
	Nodular Cast Iron (Without Scale)	◔												
	Sintered Steel										◔	✱		
H	Hard Materials (Roughing)							✱	✱					
	Hard Materials (Finishing)		○	◔	●	○	◔							
	Hard Materials (Chip Control)					●	◔							

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	Ref. Page for Toolholder
 Multi Edge	SNGA 120404S01225ME	SNGA 120404ME	S01225	0.4	1.8	2	D12 D13
	SNGA 120408S01225ME	SNGA 120408ME		0.8	1.8		
	SNGA 120404T01215ME	SNGA 120404ME		0.4	1.8		
	SNGA 120408T01215ME	SNGA 120408ME	T01215	0.8	1.8	2	
	SNGA 120412T01215ME	SNGA 120412ME		1.2	2.2		
 Multi Edge / Tough	SNGA 120404S01730MET	SNGA 120404ME-T		0.4	1.8		
	SNGA 120408S01730MET	SNGA 120408ME-T	S01730	0.8	1.8	2	
	SNGA 120412S01730MET	SNGA 120412ME-T		1.2	2.2		
 Multi Edge	TNGA 160401S01225ME	TNGA 160401ME		0.1	2.6		
	TNGA 160402S01225ME	TNGA 160402ME		0.2	2.5		
	TNGA 160404S01225ME	TNGA 160404ME	S01225	0.4	2.4	3	
	TNGA 160408S01225ME	TNGA 160408ME		0.8	2.4		
	TNGA 160412S01225ME	TNGA 160412ME		1.2	2.1		
	TNGA 160404T01215ME	TNGA 160404ME		0.4	2.4		
	TNGA 160408T01215ME	TNGA 160408ME	T01215	0.8	2.4	3	
	TNGA 160412T01215ME	TNGA 160412ME		1.2	2.1		
 Multi Edge / Tough	TNGA 160404S01730MET	TNGA 160404ME-T		0.4	2.4		
	TNGA 160408S01730MET	TNGA 160408ME-T	S01730	0.8	2.4	3	
	TNGA 160412S01730MET	TNGA 160412ME-T		1.2	2.1		
 Small Edge	TNGA 160401S01225SE	TNGA 160401SE		0.1	2.6		D14 D15 E19 F65 F70
	TNGA 160402S01225SE	TNGA 160402SE		0.2	2.9		
	TNGA 160404S01225SE	TNGA 160404SE	S01225	0.4	2.7	1	
	TNGA 160408S01225SE	TNGA 160408SE		0.8	2.4		
	TNGA 160412S01225SE	TNGA 160412SE		1.2	2.1		
	TNGA 160404T01215SE	TNGA 160404SE		0.4	2.4		
	TNGA 160408T01215SE	TNGA 160408SE	T01215	0.8	2.4	1	
	TNGA 160412T01215SE	TNGA 160412SE		1.2	2.2		
 Small Edge / Tough	TNGA 160404S01730SET	TNGA 160404SE-T		0.4	2.7		
	TNGA 160408S01730SET	TNGA 160408SE-T	S01730	0.8	2.4	1	
	TNGA 160412S01730SET	TNGA 160412SE-T		1.2	2.1		
	TNGA 160404S01225	TNGA 160404	S01225	0.4	3.8	1	
	TNGA 160408S01225	TNGA 160408		0.8	3.5		
	TNGA 160404T01215	TNGA 160404	T01215	0.4	3.8	1	
	TNGA 160408T01215	TNGA 160408		0.8	3.5		
 Chip Control	TNGM 160404S00825BB1	TNGM 160404BB1		0.4	1.5		
	TNGM 160408S00825BB1	TNGM 160408BB1	S00825	0.8	1.7	1	
	TNGM 160412S00825BB1	TNGM 160412BB1		1.2	1.9		
	TNGM 160404S01225BB2	TNGM 160404BB2		0.4	1.9		
	TNGM 160408S01225BB2	TNGM 160408BB2	S01225	0.8	2.1	1	
	TNGM 160412S01225BB2	TNGM 160412BB2		1.2	2.2		
	TNGM 160404S01625BB3	TNGM 160404BB3		0.4	2.2		
	TNGM 160408S01625BB3	TNGM 160408BB3	S01625	0.8	2.4	1	
	TNGM 160412S01625BB3	TNGM 160412BB3		1.2	2.6		

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

35° Rhombic / 80° Trigon / Negative

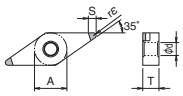
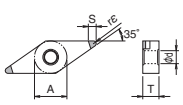
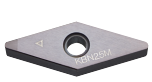
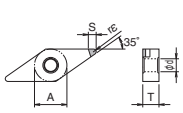
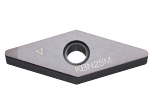
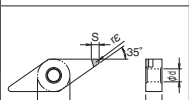
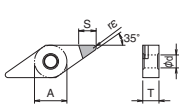
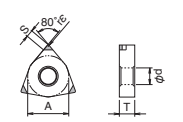
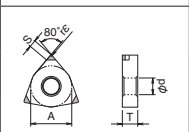
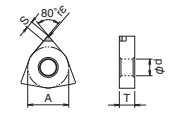
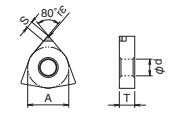
(mm)

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

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ◕: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	●
	Nodular Cast Iron (Without Scale)	◕
	Sintered Steel	◕ ✱
H	Hard Materials (Roughing)	✱ ✱
	Hard Materials (Finishing)	○ ◔ ● ○ ◕
	Hard Materials (Chip Control)	

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD Coated CBN		Ref. Page for Toolholder
 Multi Edge		VNGA 160401S01225ME	VNGA 160401ME	S01225	0.1	2.6	2				●	●								D16 D17 D18
		160402S01225ME	160402ME		0.2	2.3			●	●	●	●	●		●	●				
		160404S01225ME	160404ME		0.4	2.0			●	●	●	●	●	●	●	●				
		160408S01225ME	160408ME		0.8	1.8					●	●	●	●	●	●				
		VNGA 160404T01215ME	VNGA 160404ME	T01215	0.4	2.0	2									●	●			
		160408T01215ME	160408ME		0.8	1.8										●	●			
 Multi Edge / Tough		VNGA 160404S01730MET	VNGA 160404ME-T	S01730	0.4	2.0	2			●		●	●	●	●					
		160408S01730MET	160408ME-T		0.8	1.8				●		●	●	●	●					
 Small Edge		VNGA 160401S01225SE	VNGA 160401SE	S01225	0.1	2.6	1			●		●								
		160402S01225SE	160402SE		0.2	2.3			●	●		●	●							
		160404S01225SE	160404SE		0.4	2.7			●	●		●	●							
		160408S01225SE	160408SE		0.8	1.9			●	●		●	●							
		VNGA 160404T01215SE	VNGA 160404SE	T01215	0.4	1.9	1	●												
		160408T01215SE	160408SE		0.8	1.6		●												
 Small Edge / Tough		VNGA 160404S01730SET	VNGA 160404SE-T	S01730	0.4	1.9	1			●			●							
		160408S01730SET	160408SE-T		0.8	2.7				●			●							
		VNGA 160404S01225	VNGA 160404	S01225	0.4	4.9	1					□	□							
		160408S01225	160408		0.8	4.0						□	□							
		VNGA 160404T01215	VNGA 160404	T01215	0.4	4.9	1	□												
		160408T01215	160408		0.8	4.0		□												
 Multi Edge		WNGA 080404S01225ME	WNGA 080404ME	S01225	0.4	2.0	3		●	●	●	●	●	●	●	●				D20 F72
		080408S01225ME	080408ME		0.8	2.6			●	●	●	●	●	●	●	●				
		080412S01225ME	080412ME		1.2	2.5					●	●	●	●	●	●				
		WNGA 080404T01215ME	WNGA 080404ME	T01215	0.4	2.0	3									●	●			
		080408T01215ME	080408ME		0.8	2.6										●	●			
		080412T01215ME	080412ME		1.2	2.5										●	●			
 Multi Edge / Tough		WNGA 080404S01730MET	WNGA 080404ME-T	S01730	0.4	2.0	3				●	●	●	●						
		080408S01730MET	080408ME-T		0.8	2.6					●	●	●	●						
		080412S01730MET	080412ME-T		1.2	2.5					●	●	●	●						
 Small Edge		WNGA 080404S01225SE	WNGA 080404SE	S01225	0.4	2.0	1		●			●								
		080408S01225SE	080408SE		0.8	1.9			●			●								
 Small Edge / Tough		WNGA 080404S01730SET	WNGA 080404SE-T	S01730	0.4	2.0	1			●										
		080408S01730SET	080408SE-T		0.8	1.9				●										

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

Negative (Solid)

(mm)

Description		A	T
CNMN	0903_	9.525	3.18
	1204_	12.70	4.76

(mm)

Description		A	T
RNMN	0603_	6.35	3.18
	0903_	9.525	
	1203_	12.70	4.76
	1204_		

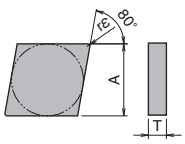
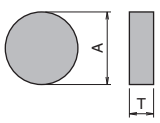
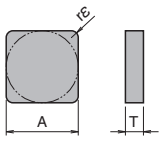
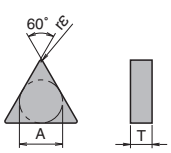
(mm)

Description		A	T
SNMN	0903_	9.525	3.18
	1203_	12.70	3.18
	1204_		4.76
TNMN	1103_	6.35	3.18
	1604_	9.525	4.76

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ◕: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	✱
	Gray Cast Iron (Without Scale)	✱
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	◕
	Hard Materials (Chip Control)	

Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	No. of Edges	PVD Coated CBN KBN900	Ref. Page for Toolholder
 Solid		CNMN 090308S02020	CNMN 090308	S02020	0.8	4	●	D32
		090312S02020	090312		1.2		●	F75
		CNMN 120408S02020	CNMN 120408	S02020	0.8		●	D22
		120412S02020	120412		1.2		●	
		120416S02020	120416		1.6		●	
		CNMN 120412S04015	CNMN 120412S04015	S04015	1.2		□	
		120416S04015	120416S04015		1.6		●	
 Solid		RNNN 060300S02020	RNMN 060300	S02020	Depends on ap		●	-
		RNMN 090300S02020	RNMN 090300				●	D33
		RNMN 120300S02020	RNMN 120300				●	
		RNMN 120400S02020	RNMN 120400				●	D27
		RNMN 120400S04015	RNMN 120400S04015	S04015			●	D33
 Solid		SNMN 090308S02020	SNMN 090308	S02020	0.8	8	●	D34 D35
		090312S02020	090312		1.2		●	F75
		SNMN 120308S02020	SNMN 120308	S02020	0.8		●	D34
		120312S02020	120312		1.2		●	D35
		SNMN 120408S02020	SNMN 120408	S02020	0.8		●	
		120412S02020	120412		1.2		●	
		120416S02020	120416		1.6		●	D25 D34 D35
		120420S02020	120420		2.0		●	
		SNMN 120412S04015	SNMN 120412S04015	S04015	1.2		□	F73
		120416S04015	120416S04015		1.6		●	
		120432S04015	120432S04015		3.2		□	
 Solid		TNMN 110308S02020	TNMN 110308	S02020	0.8	6	●	D36
		110312S02020	110312		1.2		□	F75
		TNMN 160408S02020	TNMN 160408	S02020	0.8		●	D26
		160412S02020	160412		1.2		●	
		160416S02020	160416		1.6		●	
		160420S02020	160420		2.0		□	

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

80°Rhombic / Positive

(mm)

Description		A	T	ød	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	

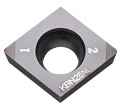
(mm)

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

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✱: Interruption / 1st Choice
- ✲: Interruption / 2nd Choice
- ◒: Light Interruption / 1st Choice
- ◌: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	●
	Gray Cast Iron (Without Scale)	●
	Nodular Cast Iron (Without Scale)	◒
	Sintered Steel	◒ ✱
H	Hard Materials (Roughing)	✲ ✱
	Hard Materials (Finishing)	○ ◌ ● ○ ◒
	Hard Materials (Chip Control)	

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD coated CBN		Ref. Page for Toolholder
 Multi Edge	CCMW 060202T00815ME	CCMW 060202ME	T00815	0.2	2.0	2		●	●	●	●	●		●	●					E20 E21 E33 F27 F29
	CCMW 060204T00815ME	CCMW 060204ME		0.4	1.9			●	●	●	●	●		●	●					
	CCMW 060208T00815ME	CCMW 060208ME		0.8	1.8			●	●	●	●	●		●	●					
	CCMW 09T302T00815ME	CCMW 09T302ME	T00815	0.2	2.0	2		●	●	●	●	●		●	●					E20 E21
	CCMW 09T304T00815ME	CCMW 09T304ME		0.4	1.9			●	●	●	●	●	●	●	●	●	●			
	CCMW 09T308T00815ME	CCMW 09T308ME		0.8	1.8			●	●	●	●	●	●	●	●	●	●			
Multi Edge / Tough	CCMW 09T304S01035MET	CCMW 09T304ME-T	S01035	0.4	1.9	2			●		●	●		●						E33 F27 F66
	CCMW 09T308S01035MET	CCMW 09T308ME-T		0.8	1.8						●	●		●						
 Small Edge	CCMW 030102T00815SE	CCMW 030102SE	T00815	0.2	1.4	1		●	●		●	●								F27 F29
	CCMW 030104T00815SE	CCMW 030104SE		0.4	1.4			●	●		●	●								
	CCMW 040102T00815SE	CCMW 040102SE	T00815	0.2	1.4	1		●	●		●	●								
	CCMW 040104T00815SE	CCMW 040104SE		0.4	1.4			●	●		●	●								
	CCMW 060202T00815SE	CCMW 060202SE	T00815	0.2	2.0	1		●	●											E20 E21 E33 F27 F29
	CCMW 060204T00815SE	CCMW 060204SE		0.4	1.9			●	●			●								
	CCMW 09T302T00815SE	CCMW 09T302SE	T00815	0.2	2.0	1		●	●		●									E20 E21 E33 F27 F29 F66
	CCMW 09T304T00815SE	CCMW 09T304SE		0.4	1.9			●	●		●									
Small Edge / Tough	CCMW 030102S01035SET	CCMW 030102SE-T	S01035	0.2	1.4	1					●	●								F27 F29
	CCMW 030104S01035SET	CCMW 030104SE-T		0.4	1.4				●		●	●								
	CCMW 040102S01035SET	CCMW 040102SE-T	S01035	0.2	1.4	1					●	●								
	CCMW 040104S01035SET	CCMW 040104SE-T		0.4	1.4				●		●	●								
	CCMW 060204S01035SET	CCMW 060204SE-T	S01035	0.4	1.9	1			●											E20 E21 E33 F27
	CCMW 09T304S01035SET	CCMW 09T304SE-T	S01035	0.4	1.9	1			●											E20~E21 E33 F27 F66
 Multi Edge	CPGB 080204T00815ME	CPGB 080204ME	T00815	0.4	1.9	2		●	●	●	●	●		●	●					F31 F33
	CPGB 090302T00815ME	CPGB 090302ME	T00815	0.2	1.9	2		●	●	●	●	●		●	●					
	CPGB 090304T00815ME	CPGB 090304ME		0.4	1.9			●	●	●	●	●		●	●					
Multi Edge / Tough	CPGB 080204S01035MET	CPGB 080204ME-T	S01035	0.4	1.9	2			●		●	●		●						
	CPGB 080208S01035MET	CPGB 080208ME-T		0.8	2.2						●	●		●						
	CPGB 090304S01035MET	CPGB 090304ME-T	S01035	0.4	1.9	2			●		●	●		●						
	CPGB 090308S01035MET	CPGB 090308ME-T		0.8	2.5						●	●		●						
 Small Edge	CPGB 080202T00815SE	CPGB 080202SE	T00815	0.2	1.9	1		●	●											
	CPGB 080204T00815SE	CPGB 080204SE		0.4	1.9			●	●											
	CPGB 090302T00815SE	CPGB 090302SE	T00815	0.2	1.9	1		●	●											
	CPGB 090304T00815SE	CPGB 090304SE		0.4	1.9			●	●		●									
Small Edge / Tough	CPGB 080204S01035SET	CPGB 080204SE-T	S01035	0.4	1.9	1			●			●								
	CPGB 090304S01035SET	CPGB 090304SE-T	S01035	0.4	1.9	1			●											
	CPGB 090304T00815	CPGB 090304	T00815	0.4	3.7	1		□	□											
	CPGB 090308T00815	CPGB 090308		0.8	3.6			□	□											

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

55°Rhombic / Positive

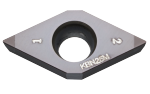
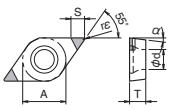
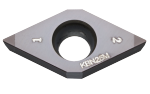
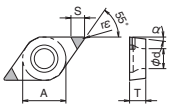
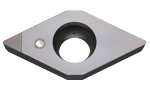
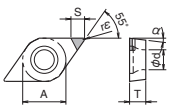
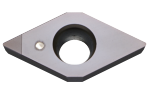
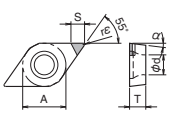
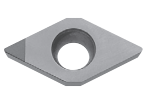
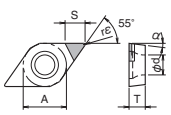
(mm)

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

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖: Interruption / 1st Choice
✱: Interruption / 2nd Choice
◕: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	●
	Nodular Cast Iron (Without Scale)	◕
	Sintered Steel	◕ ✖
H	Hard Materials (Roughing)	✱ ✖
	Hard Materials (Finishing)	○ ◔ ● ○ ◕
	Hard Materials (Chip Control)	

Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD coated CBN		Ref. Page for Toolholder
 Multi Edge		DCMW 070202T00815ME	DCMW 070202ME	T00815	0.2	1.9	2		●	●	●	●	●		●	●						
		070204T00815ME	070204ME		0.4	1.7			●	●	●	●	●		●	●						
		070208T00815ME	070208ME		0.8	1.9			●	●	●	●	●		●	●						
		DCMW 11T302T00815ME	DCMW 11T302ME	T00815	0.2	1.9	2		●	●	●	●	●		●	●						
		11T304T00815ME	11T304ME		0.4	1.7			●	●	●	●	●	●	●	●	●	●				
		11T308T00815ME	11T308ME		0.8	1.9			●	●	●	●	●	●	●	●	●	●				
		11T312T00815ME	11T312ME		1.2	1.9				●	●	●	●	●	●							
 Multi Edge / Tough		DCMW 070202S01035MET	DCMW 070202ME-T	S01035	0.2	1.9	2					●	●		●							
		070204S01035MET	070204ME-T		0.4	1.7						●	●		●							
		070208S01035MET	070208ME-T		0.8	1.9						●	●		●							
		DCMW 11T302S01035MET	DCMW 11T302ME-T	S01035	0.2	1.9	2			●		●	●		●							
		11T304S01035MET	11T304ME-T		0.4	1.7				●		●	●		●							
		11T308S01035MET	11T308ME-T		0.8	1.9				●		●	●		●							
		11T312S01035MET	11T312ME-T		1.2	1.9						●	●		●							
 Small Edge		DCMW 070202T00815SE	DCMW 070202SE	T00815	0.2	1.9	1		●	●		●	●									
		070204T00815SE	070204SE		0.4	1.7			●	●		●	●									
		DCMW 11T302T00815SE	DCMW 11T302SE	T00815	0.2	1.9	1		●	●												
		11T304T00815SE	11T304SE		0.4	1.7			●	●												
		11T308T00815SE	11T308SE		0.8	1.9				●			●									
 Small Edge / Tough		DCMW 070204S01035SET	DCMW 070204SE-T	S01035	0.4	1.7	1			●												
		DCMW 11T302S01035SET	DCMW 11T302SE-T	S01035	0.2	1.9	1			●												
		11T304S01035SET	11T304SE-T		0.4	1.7				●												
		11T308S01035SET	11T308SE-T		0.8	1.9				●												
		DCMW 11T302T00815	DCMW 11T302	T00815	0.2	3.7	1		□	□												
		11T304T00815	11T304		0.4	3.5		□	□	□												
		11T308T00815	11T308		0.8	3.1		□														

Refer to the table below

Description	Ref. Page for Toolholder
DC..07 type	**E22~E25, F35~F39**
DC..11 type	**E22~E25, F35~F39, F66**

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

60°Triangle / Positive

(mm)

Description	A	T	ød	α
TPGB 0802_	4.76	2.38	2.5	11°
0902_	5.56		3.0	

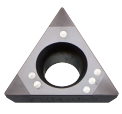
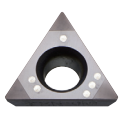
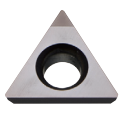
(mm)

Description	A	T	ød	α
TPGB 1103_	6.35	3.18	3.5	11°
1603_	9.525		4.5	

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✱:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	●
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	
H	Hard Materials (Roughing)	✖
	Hard Materials (Finishing)	○ ◔ ● ○ ◕
	Hard Materials (Chip Control)	

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD coated CBN		Ref. Page for Toolholder
 Multi Edge	TPGB 110302T00815ME	TPGB 110302ME	T00815	0.2	2.3	3		●	●	●	●	●		●	●					E27 F43 F45 F47
	110304T00815ME	110304ME		0.4	2.1			●	●	●	●	●		●	●					
	110308T00815ME	110308ME		0.8	1.8			●	●	●	●	●		●	●					
	TPGB 160304T00815ME	TPGB 160304ME	T00815	0.4	1.8	3				●	●	●		●	●					F43 F45 F47
	160308T00815ME	160308ME		0.8	1.5					●	●	●		●	●					
 Multi Edge / Tough	TPGB 110302S01035MET	TPGB 110302ME-T	S01035	0.2	2.3	3					●	●		●						E27 F43 F45 F47
	110304S01035MET	110304ME-T		0.4	2.1						●	●		●						
	110308S01035MET	110308ME-T		0.8	1.8						●	●		●						
	TPGB 160304S01035MET	TPGB 160304ME-T	S01035	0.4	1.8	3			●		●	●		●						F43 F45 F47
	160308S01035MET	160308ME-T		0.8	1.5				●		●	●		●						
 Small Edge	TPGB 080202T00815SE	TPGB 080202SE	T00815	0.2	1.8	1		●	●		●	●								E27 F45 F48
	080204T00815SE	080204SE		0.4	1.6			●	●		●	●								
	TPGB 090202T00815SE	TPGB 090202SE	T00815	0.2	1.8	1		●	●		●	●								F43 F45 F48
	090204T00815SE	090204SE		0.4	1.6			●	●		●	●								
	TPGB 110302T00815SE	TPGB 110302SE	T00815	0.2	1.9	1		●	●		●									E27 F43 F45 F47
	110304T00815SE	110304SE		0.4	1.8			●	●		●									
	110308T00815SE	110308SE		0.8	1.5				●											
	TPGB 160302T00815SE	TPGB 160302SE	T00815	0.2	1.9	1		●	●		●									F43 F45 F47
	160304T00815SE	160304SE		0.4	1.8			●	●		●									
 Small Edge / Tough	TPGB 080202S01035SET	TPGB 080202SE-T	S01035	0.2	1.8	1					●	●								E27 F45 F48
	080204S01035SET	080204SE-T		0.4	1.6				●		●	●								
	TPGB 090202S01035SET	TPGB 090202SE-T	S01035	0.2	1.8	1					●	●								F43 F45 F48
	090204S01035SET	090204SE-T		0.4	1.6				●		●	●								
	TPGB 110304S01035SET	TPGB 110304SE-T	S01035	0.4	1.8	1			●											E27 F43 F45 F47
	110308S01035SET	110308SE-T		0.8	1.5				●											
	TPGB 160304S01035SET	TPGB 160304SE-T	S01035	0.4	1.8	1			●											F43 F45 F47
	160308S01035SET	160308SE-T		0.8	1.5				●											
	TPGB 080202T00815	TPGB 080202	T00815	0.2	2.4	1		□	□											E27 F45 F48
	080204T00815	080204		0.4	2.3			□	□											
	TPGB 090202T00815	TPGB 090202	T00815	0.2	2.9	1		□	□											F43 F45 F48
	090204T00815	090204		0.4	2.8			□	□											
	TPGB 110302T00815	TPGB 110302	T00815	0.2	3.9	1		□	□											E27 F43 F45 F47
	110304T00815	110304		0.4	3.8			□	□											
	110308T00815	110308		0.8	3.5			□	□											
	TPGB 160302T00815	TPGB 160302	T00815	0.2	4.0	1			□											F43 F45 F47
	160304T00815	160304		0.4	3.8			□	□											
	160308T00815	160308		0.8	3.5			□	□											

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

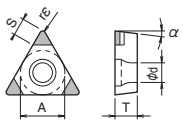
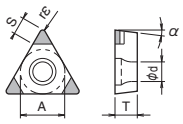
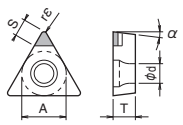
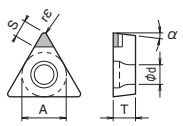
(mm)

Description	A	T	ød	α
TPGW 1604_	9.525	4.76	4.4	11°

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖: Interruption / 1st Choice
❁: Interruption / 2nd Choice
◓: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	◔ ○ ◓
	Hard Materials (Chip Control)	

Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD coated CBN	PVD coated CBN	Ref. Page for Toolholder
 Multi Edge		TPGW 160404T00815ME	TPGW 160404ME	T00815	0.4	1.8	3					●	●								-
		TPGW 160408T00815ME	TPGW 160408ME		0.8	1.5						●	●								
 Multi Edge / Tough		TPGW 160404S01035MET	TPGW 160404ME-T	S01035	0.4	1.8	3			●		●	●								
		TPGW 160408S01035MET	TPGW 160408ME-T		0.8	1.5				□		●	●								
 Small Edge		TPGW 160404T00815SE	TPGW 160404SE	T00815	0.4	1.8	1			●											
		TPGW 160408T00815SE	TPGW 160408SE		0.8	1.5				●											
 Small Edge / Tough		TPGW 160404S01035SET	TPGW 160404SE-T	S01035	0.4	1.9	1			●											
		TPGW 160408S01035SET	TPGW 160408SE-T		0.8	1.8				●											

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

35°Rhombic / Positive

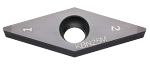
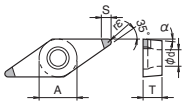
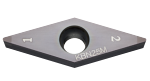
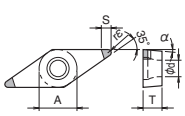
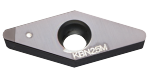
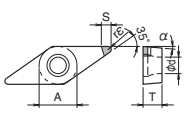
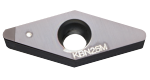
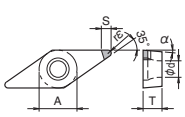
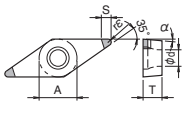
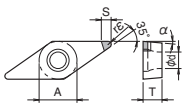
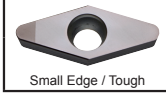
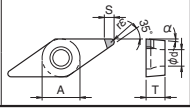
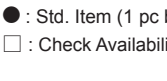
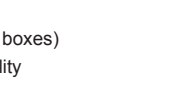
(mm)

Description	A	T	ød	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.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
- ✖: Interruption / 1st Choice
- ✱: Interruption / 2nd Choice
- ◕: Light Interruption / 1st Choice
- ◔: Light Interruption / 2nd Choice
- ●: Continuous / 1st Choice
- ○: Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	●
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	◕ ✖
H	Hard Materials (Roughing)	✱ ✖
	Hard Materials (Finishing)	○ ◔ ● ○ ◕
	Hard Materials (Chip Control)	

Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	Dimension (mm) S	No. of Edges	CBN KBN65B	CBN KBN510	CBN KBN525	MEGACOAT CBN KBN05M	MEGACOAT CBN KBN10M	MEGACOAT CBN KBN25M	MEGACOAT CBN KBN30M	MEGACOAT CBN KBN35M	MEGACOAT CBN KBN60M	MEGACOAT CBN KBN65M	MEGACOAT CBN KBN70M	PVD coated CBN		Ref. Page for Toolholder
 Multi Edge		VBGW 110302T00815ME	VBGW110302ME	T00815	0.2	2.4	2		●	●	●	●	●		●	●					E28 E29 E35 F51 F53 F55
		110304T00815ME	110304ME		0.4	2.0			●	●	●	●	●	●	●	●	●				
		110308T00815ME	110308ME		0.8	1.7			●	●	●	●	●	●	●	□	●				
		VBGW 160402T00815ME	VBGW160402ME		0.2	2.4			●	●	●	●	●		●	●					E28 E29 F51 F53 F55
		160404T00815ME	160404ME	T00815	0.4	2.0	2		●	●	●	●	●	●	●	●	●				
		160408T00815ME	160408ME		0.8	1.7			●	●	●	●	●	●	●	●	●				
 Multi Edge / Tough		VBGW 110302S01035MET	VBGW110302ME-T	S01035	0.2	2.4	2					●	●		●						E28 E29 E35 F51 F53 F55
		110304S01035MET	110304ME-T		0.4	2.0				●		●	●		●						
		110308S01035MET	110308ME-T		0.8	1.7						●	●		●						
		VBGW 160402S01035MET	VBGW160402ME-T	S01035	0.2	2.4	2					●	●		●						E28 E29 F51 F53 F55
		160404S01035MET	160404ME-T		0.4	2.0				●		●	●		●						
		160408S01035MET	160408ME-T		0.8	1.7						●	●		●						
 Small Edge		VBGW 110302T00815SE	VBGW110302SE	T00815	0.2	2.8	1		●	●		●	●								E28 E29 E35 F51 F53 F55
		110304T00815SE	110304SE		0.4	2.4			●	●		●	●								
		110308T00815SE	110308SE		0.8	1.7			●	□		●	□								
		VBGW 160402T00815SE	VBGW160402SE	T00815	0.2	2.4	1		●	●											E28 E29 F51 F53 F55
		160404T00815SE	160404SE		0.4	2.0			●	●		●									
		160408T00815SE	160408SE		0.8	1.7			●	●											
 Small Edge / Tough		VBGW 110304S01035SET	VBGW110304SE-T	S01035	0.4	2.0	1			●											E28-E29 E35 F51 F53 F55
		110308S01035SET	110308SE-T		0.8	1.7				□			●								
		VBGW 160404S01035SET	VBGW160404SE-T	S01035	0.4	2.0	1			●											E28 E29 F51 F53 F55
		160408S01035SET	160408SE-T		0.8	1.7				●											
 Multi Edge		VCGW 080202T00815ME	VCGW080202ME	T00815	0.2	2.0	2		●	●	●	●	●		●	●					E35 F51 F53 F55
		080204T00815ME	080204ME		0.4	2.0			●	●	●	●	●		●	●					
		080208T00815ME	080208ME		0.8	1.7			●	□	●	●	●		●	●					
		VCGW 160408T00815ME	VCGW160408S2E	T00815	0.8	2.7	2	●													E29 F51 F53 F55
		160412T00815ME	160412S2E		1.2	1.9		●													
 Multi Edge / Tough		VCGW 080202S01035MET	VCGW080202ME-T	S01035	0.2	2.0	2					●	●		●						
		080204S01035MET	080204ME-T		0.4	2.0						●	●		●						
		080208S01035MET	080208ME-T		0.8	1.7						●	●		●						
 Small Edge		VCGW 080202T00815SE	VCGW080202SE	T00815	0.2	2.4	1		●	●		●	●								E35 F51 F53 F55
		080204T00815SE	080204SE		0.4	2.0			●	●		●									
		080208T00815SE	080208SE		0.8	1.8			●	●											
 Small Edge / Tough		VCGW 080204S01035SET	VCGW080204SE-T	S01035	0.4	2.0	1			●											
		080208S01035SET	080208SE-T		0.8	1.8				●											

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

80°Trigon / Positive

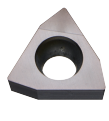
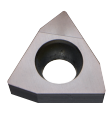
(mm)

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

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✱:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	○ ◔ ● ◕
	Hard Materials (Chip Control)	

Insert (Handed insert indicates Left-hand)	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	S	No. of Edges	CBN KBN65B	KBN510	KBN525	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	PVD coated CBN	Ref. Page for Toolholder
 Small Edge	WBGW060102T00815R/L-SE	WBGW060102R/L-SE	T00815	0.2	1.9	1		L	L		L	L							F57 F59
	060104T00815R/L-SE	060104R/L-SE		0.4	1.9			L	L		L	L							
	WBGW080202T00815R/L-SE	WBGW080202R/L-SE	T00815	0.2	2.3	1		L	L		L	L							
	080204T00815R/L-SE	080204R/L-SE		0.4	2.3			L	L		L	L							
 Small Edge / Tough	WBGW060102S01035R/LSET	WBGW060102R/L-SE-T	S01035	0.2	1.9	1					L	L							
	060104S01035R/LSET	060104R/L-SE-T		0.4	1.9				L		L	L							
	WBGW080202S01035R/LSET	WBGW080202R/L-SE-T	S01035	0.2	2.3	1					L	L							
	080204S01035R/LSET	080204R/L-SE-T		0.4	2.3				L		L	L							

60°Triangle / Positive without Hole

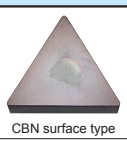
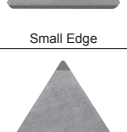
(mm)

Description	A	T	ød	α
TBGN 0601_	3.97	1.59	-	5°
TPGN 1103_	6.35	3.18		11°
1603_	9.525			

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✱:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)	
	Gray Cast Iron (Without Scale)	
	Nodular Cast Iron (Without Scale)	
	Sintered Steel	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	○ ◔ ●
	Hard Materials (Chip Control)	

Insert	Description	(Previous Description)	Edge Prep.	Dimension (mm) rε	S	No. of Edges	CBN KBN65B	KBN510	KBN525	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	PVD coated CBN	Ref. Page for Toolholder
 CBN surface type	TBGN 060102T00815	TBGN 060102	T00815	0.2	-	3		●	●		●								-
	060104T00815	060104		0.4	-			●	●		●								
	060108T00815	060108		0.8	-			●	●		●								
 Multi Edge	TPGN 110302T00815ME	TPGN 110302ME	T00815	0.2	2.6	3		●	●										E37 F61
	110304T00815ME	110304ME		0.4	2.5			●	●										
	110308T00815ME	110308ME		0.8	2.4			●	●										
 Small Edge	TPGN 110302T00815SE	TPGN 110302SE	T00815	0.2	2.6	1		●	●										
	110304T00815SE	110304SE		0.4	2.5			●	●										
	110308T00815SE	110308SE		0.8	2.4				●										
	TPGN 160302T00815SE	TPGN 160302SE	T00815	0.2	2.6	1		●	●										
	160304T00815SE	160304SE		0.4	2.4			●	●										
	160308T00815SE	160308SE		0.8	2.1				●										
 Small Edge / Tough	TPGN 110304S01035SET	TPGN 110304SE-T	S01035	0.4	2.5	1			●										
	110308S01035SET	110308SE-T		0.8	2.4				●										
	TPGN 160304S01035SET	TPGN 160304SE-T	S01035	0.4	2.4	1			●										
	160308S01035SET	160308SE-T		0.8	2.1				●										
	TPGN 110304T00815	TPGN 110304	T00815	0.4	3.8	1		□	□										
	110308T00815	110308		0.8	3.5			□	□										
	TPGN 160304T00815	TPGN 160304	T00815	0.4	3.9	1			□										
	160308T00815	160308		0.8	3.6			□	□										
	160312T00815	160312		1.2	3.3				□										

● : Std. Item (1 pc boxes)
L : Std. Item (L-hand Only)
□ : Check Availability

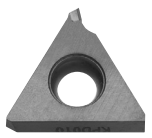
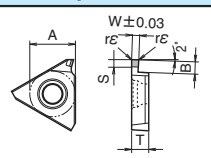
CBN & PCD Tools are sold in 1 piece boxes.

Grooving Inserts (1-Edge)

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✲:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)		
	Gray Cast Iron (Without Scale)		
	Nodular Cast Iron (Without Scale)		
	Sintered Steel		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	○	●
	Hard Materials (Chip Control)		

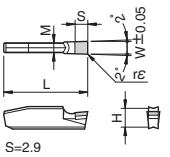
Insert (Handed Insert shows Right-hand)		Description	(Previous Description)	Edge Prep.	Dimension (mm) W	B	rε	A	T	ød	S			No. of Edges	CBN KBN510	KBN525	Ref. Page for Toolholder
 External / Internal Grooving		GBA43R/L 125-020	GBA43R/L 125	E008	1.25	2.0									●	●	
		150-020	150	E008	1.50	3.5									●	●	G13
		200-020	200	E008	2.00	3.5	0.2	12.70	4.76	5.5	1.9			1	●	●	G15
		250-020	250	E008	2.50	4.0									●	●	G55
		300-020	300	E008	3.00	4.0									●	●	

Deep Grooving Inserts (1-Edge)

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✲:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)		
	Gray Cast Iron (Without Scale)		
	Nodular Cast Iron (Without Scale)		
	Sintered Steel		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	○	●
	Hard Materials (Chip Control)		

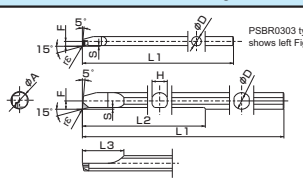
Insert		Description	(Previous Description)	Edge Prep.	Dimension (mm) W	B	rε	A	T	ød	S			No. of Edges	CBN KBN510	KBN525	Ref. Page for Toolholder
 External Grooving	 S=2.9	GMN 2	-	E008	2.0	0.2			1.8						●	●	G36,G37
		3	-	E008	3.0				2.3						●	●	G36
		4	-	E008	4.0	0.4	20	4.3	3.3	2.9				1	●	●	G37
		5	-	E008	5.0				4.2						●	●	G38
		6	-	E008	6.0				5.2						●	●	G37,G38

Tip-Bars

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R Honed	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

Classification of usage
✖:Interruption / 1st Choice
✲:Interruption / 2nd Choice
◕:Light Interruption / 1st Choice
◔:Light Interruption / 2nd Choice
●:Continuous / 1st Choice
○:Continuous / 2nd Choice

K	Gray Cast Iron (With Scale)		
	Gray Cast Iron (Without Scale)		
	Nodular Cast Iron (Without Scale)		
	Sintered Steel		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	○	●
	Hard Materials (Chip Control)		

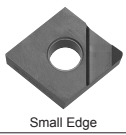
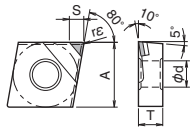
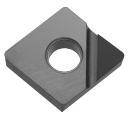
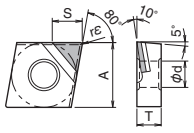
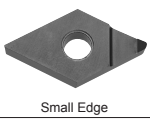
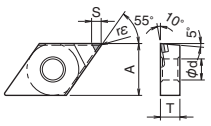
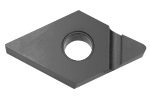
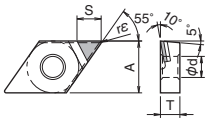
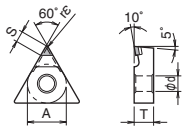
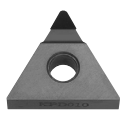
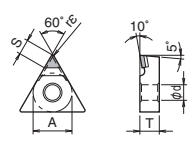
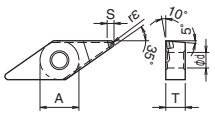
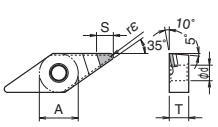
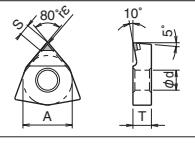
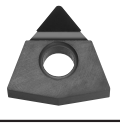
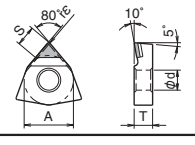
Insert (Handed Insert shows Right-hand)		Description	(Previous Description)	Edge Prep.	Min.Bore Dia. øA	Dimension (mm) øD	H	L1	L2	L3	F	S	rε	No. of Edges	CBN KBN510	KBN525	Ref. Page for Toolholder
 PSBR0303 type shows left Figure.		PSBR 0303-50NBS	-	T00815	3	2.8	-	50	25	7	1.4	0.15			●	●	
		0404-60NBS	-	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		0.05	1	●	●	F25
		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				●	●	

CBN & PCD Tools are sold in 1 piece boxes.

Negative

Classification of usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

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

Edge Prep.		Insert		Description		Dimension (mm)					Angle (°)	No. of Edges	PCD		Ref. Page for Toolholder
All Items	Sharp Edge					A	T	ød	rε	S	α		KPD001	KPD010	
		 Small Edge		CNMM	120402M-SE	12.70	4.76	5.16	0.2	2.8	-	1	●	●	D8 E18 F64 F68
					120404M-SE				0.4	2.8			●	●	
					120408M-SE				0.8	2.7			●	●	
				CNMM	120402M-NE				0.2	5.1			●		
					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	●	●	D10 D11 F65
					150404M-SE				0.4	2.6			●	●	
					150408M-SE				0.8	2.2			●	●	
				DNMM	150402M-NE				0.2	5.2			●		
					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	●	●	D14 D15 E19 F65 F70
					160404M-SE				0.4	2.6			●	●	
					160408M-SE				0.8	2.3			●	●	
				TNMM	160402M-NE				0.2	3.2			●		
					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	●	●	D16 D17 D18
					160404M-SE				0.4	2.5			●	●	
					160408M-SE				0.8	1.6			●	●	
				VNMM	160402M-NE				0.2	4.7			●		
					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		●	D20 F72
					080404M-SE				0.4	2.8				●	
					080408M-SE				0.8	2.7				●	
				WNMM	080402M-NE				0.2	5.0			●		
					080404M-NE				0.4	5.0			●		
				WNMM	080402M				0.2	5.8				●	
					080404M				0.4	5.8				●	

・SE: Small Edge / NE: New Value Edge.

● : Std. Item (1 pc boxes)

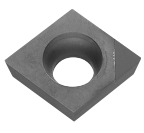
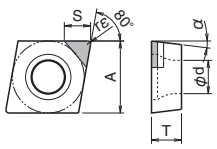
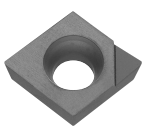
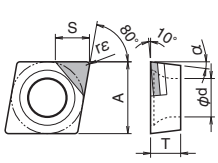
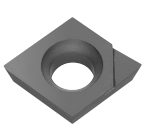
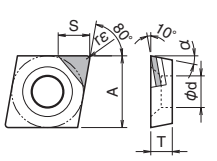
CBN & PCD Tools are sold in 1 piece boxes.

Positive

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

		KPD001	KPD010
N	Non-ferrous Metals (with interruption)	◔	
	Non-ferrous Metals (without interruption)	●	
S	Titanium Alloy (with interruption)	◔	
	Titanium Alloy (without interruption)	●	

Edge Prep.: All Items / Sharp Edge

Insert	Description	A	T	ød	rε	S	α	No. of Edges	KPD001	KPD010	Ref. Page for Toolholder
 	CCGW 040101NE	4.3	1.8	2.3	0.1	1.7	7°	1	●		
	CCGW 040102NE				0.2	1.6			●		
	CCGW 040104NE				0.4	1.6			●		F27
	CCGW 040101				0.1	1.9			●	○	F29
	CCGW 040102				0.2	1.9			●	●	
	CCGW 040104				0.4	1.9			●	●	
	CCGW 060201NE	6.35	2.38	2.8	0.1	3.1			●		
	CCGW 060202NE				0.2	3.0			●		
	CCGW 060204NE				0.4	3.0			●		E20
	CCGW 060202SE				0.2	1.9				○	E21
	CCGW 060204SE				0.4	1.9				○	E33
	CCGW 060208SE				0.8	1.8				○	F27
	CCGW 060201				0.1	3.5				●	F29
	CCGW 060202				0.2	3.5				●	
	CCGW 060204				0.4	3.5				●	
	CCGW 09T301NE	9.525	3.97	4.4	0.1	3.4			●		
	CCGW 09T302NE				0.2	3.4			●		
	CCGW 09T304NE				0.4	3.4			●		E20
	CCGW 09T308NE				0.8	3.3			●		E21
	CCGW 09T304SE				0.4	1.9				○	E33
	CCGW 09T308SE				0.8	1.8				○	F27
	CCGW 09T301				0.1	3.8			●	●	F29
	CCGW 09T302				0.2	3.8			●	●	F66
	CCGW 09T304				0.4	3.7			●	●	
	CCGW 09T308				0.8	3.6				●	
 	CCMT 060201NE	6.35	2.38	2.8	0.1	2.8	7°	1	●		E20
	CCMT 060202NE				0.2	2.8			●		E21
	CCMT 060204NE				0.4	2.8			●		E33
	CCMT 060201				0.1	3.3			●	●	F27
	CCMT 060202				0.2	3.3			●	●	F29
	CCMT 060204				0.4	3.2			●	●	
	CCMT 09T301NE	9.525	3.97	4.4	0.1	3.4			●		
	CCMT 09T302NE				0.2	3.4			●		
	CCMT 09T304NE				0.4	3.4			●		E20
	CCMT 09T308NE				0.8	3.3			●		E21
	CCMT 09T304SE				0.4	1.9				○	E33
	CCMT 09T308SE				0.8	1.8				○	F27
	CCMT 09T301				0.1	3.9			●	●	F29
	CCMT 09T302				0.2	3.9			●	●	F66
	CCMT 09T304				0.4	3.9			●	●	
	CCMT 09T308				0.8	3.8				●	
	CCMT 120404SE	12.70	4.76	5.16	0.4	2.8				○	E21
	CCMT 120408SE				0.8	2.7				○	
 	CPMH 080201NE	7.94	2.38	3.5	0.1	3.2	11°	1	○		
	CPMH 080202NE				0.2	3.2			●		
	CPMH 080204NE				0.4	3.2			●		
	CPMH 080208NE				0.8	3.2			○		
	CPMH 080201				0.1	3.7			●	●	
	CPMH 080202				0.2	3.7			●	●	
	CPMH 080204				0.4	3.7			●	●	
	CPMH 080208				0.8	3.5				●	F31
	CPMH 090301NE	9.525	3.18	4.5	0.1	3.4			●		F33
	CPMH 090302NE				0.2	3.4			●		
	CPMH 090304NE				0.4	3.4			●		
	CPMH 090308NE				0.8	3.3			●		
	CPMH 090301				0.1	4.0			○	●	
	CPMH 090302				0.2	3.9			●	●	
	CPMH 090304				0.4	3.9			●	●	
	CPMH 090308				0.8	3.8				●	

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

● : Std. Item (1 pc boxes)
○ : Check Availability

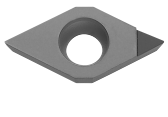
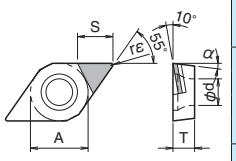
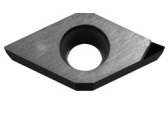
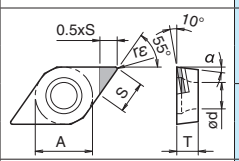
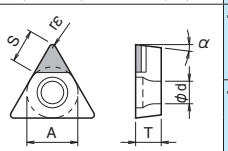
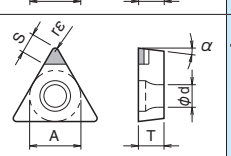
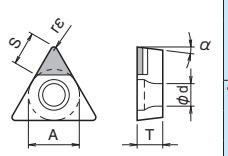
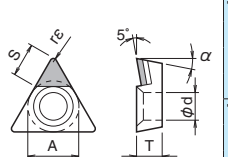
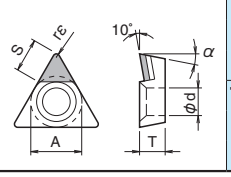
CBN & PCD Tools are sold in 1 piece boxes.

Positive

Edge Prep.: All Items | Sharp Edge

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

		KPD001	KPD010
N	Non-ferrous Metals (with interruption)	◔	
	Non-ferrous Metals (without interruption)	●	
S	Titanium Alloy (with interruption)	◔	
	Titanium Alloy (without interruption)	●	

Insert (Handed insert indicates Left-hand)	Description	Dimension (mm) A	T	ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
 	DCMT 070201NE	6.35	2.38	2.8	0.1	3.4	7 °	1	●		Refer to the table below.
	DCMT 070202NE				0.2	3.4			●		
	DCMT 070204NE				0.4	3.2			●		
	DCMT 070202SE				0.2	2.5				□	
	DCMT 070204SE				0.4	2.4				□	
	DCMT 070201				0.1	4.0			●	●	
	DCMT 070202				0.2	3.9			●	●	
	DCMT 070204				0.4	3.7			●	●	
	DCMT 11T301NE	9.525	3.97	4.4	0.1	3.4			●		
	DCMT 11T302NE				0.2	3.3			●		
	DCMT 11T304NE				0.4	3.2			●		
	DCMT 11T308NE				0.8	2.8			●		
	DCMT 11T304SE				0.4	2.2				□	
	DCMT 11T308SE				0.8	2.0				□	
	DCMT 11T301				0.1	4.0			●	●	
	DCMT 11T302				0.2	3.9			●	●	
	DCMT 11T304				0.4	3.7			●	●	
	DCMT 11T308				0.8	3.3			●	●	
 	DCMT 070202R/L-NE	6.35	2.38	2.8	0.2	3.3			●		
	DCMT 070204R/L-NE				0.4	3.2			●		
	DCMT 11T302R/L-NE	9.525	3.97	4.4	0.2	3.3			●		
	DCMT 11T304R/L-NE				0.4	3.2			●		
 	TBGW 060102NE	3.97	1.59	2.3	0.2	2.1	5 °	1	●		F43 F45
	TBGW 060104NE				0.4	1.9			●		
	TBGW 060102				0.2	2.4			●	●	
	TBGW 060104				0.4	2.2			●	●	
 Small Edge 	TCGW 110302SE	6.35	3.18	2.8	0.2	2.5	7 °	1		●	E27
	TCGW 110304SE				0.4	2.4				●	
 	TCGW 110302NE				0.2	3.3			●		
	TCGW 110304NE				0.4	3.2			●		
	TCGW 110308NE				0.8	2.9			●		
	TCGW 110302				0.2	3.9				●	
	TCGW 110304				0.4	3.7				●	
	TCGW 110308				0.8	3.4				□	
 	TBMT 060101NE	3.97	1.59	2.3	0.1	2.2	5 °	1	●		F43 F45
	TBMT 060102NE				0.2	2.1			●		
	TBMT 060104NE				0.4	2.0			●		
	TBMT 060108NE				0.8	1.7			●		
	TBMT 060101				0.1	2.6				●	
	TBMT 060102				0.2	2.5			□	●	
	TBMT 060104				0.4	2.3			□	●	
	TBMT 060108				0.8	2.0			□	●	
 	TCMT 080202NE	4.76	2.38	2.3	0.2	2.1	7 °	1	□		E27
	TCMT 080204NE				0.4	2.0			□		
	TCMT 080208NE				0.8	1.7			□		
	TCMT 080202				0.2	2.4				●	
	TCMT 080204				0.4	2.2				●	
	TCMT 080208				0.8	1.9				●	

・SE: Small Edge / NE: New Value Edge.

Insert Description	Ref. Page for Toolholder
DC..07 type	**E22~25,E35~39**
DC..11 type	**E22~25,F35~39,F66**

● : Std. Item (1 pc boxes)
□ : Check Availability

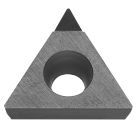
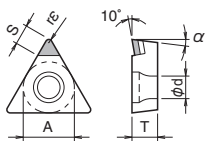
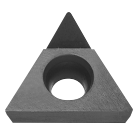
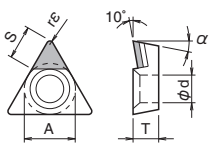
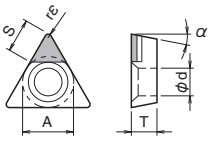
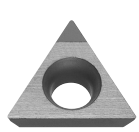
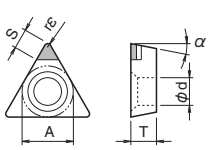
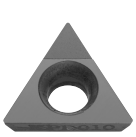
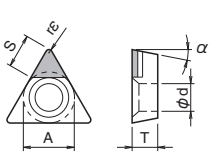
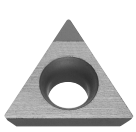
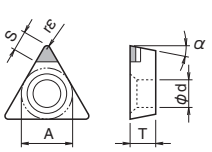
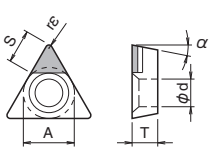
CBN & PCD Tools are sold in 1 piece boxes.

Positive

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

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

Edge Prep.: All Items / Sharp Edge

Insert		Description		Dimension (mm) A	T	ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
 Small Edge		TCMT	110301SE	6.35	3.18	2.8	0.1	2.6	7 °	1		●	E27
			110302SE				0.2	2.5				●	
			110304SE				0.4	2.4				●	
		TCMT	110302NE				0.2	3.4			●		
			110304NE				0.4	3.3			●		
			110308NE				0.8	3.0			●		
		TCMT	110302				0.2	3.9				●	
			110304				0.4	3.7				●	
			110308				0.8	3.4				□	
		TPGB	080202NE	4.76	2.38	2.3	0.2	2.2			●		E27 F45 F48
			080204NE				0.4	2.1			●		
			080208NE				0.8	1.8			●		
		TPGB	080202				0.2	2.6			●	●	
			080204				0.4	2.4			●	●	
			080208				0.8	2.2				□	
		TPGB	090202NE	5.56	2.38	3.0	0.2	2.7			●		F43 F45 F48
			090204NE				0.4	2.6			●		
			090208NE				0.8	2.3			●		
		TPGB	090202				0.2	3.2			●	●	
			090204				0.4	3.0			●	●	
			090208				0.8	2.7				□	
 Small Edge		TPGB	110301SE	6.35	3.18	3.3	0.1	2.7	11 °	1	●	●	E27 F43 F45 F47
			110302SE				0.2	2.6			●	●	
			110304SE				0.4	2.5			●	●	
		TPGB	110302NE				0.2	3.4			●		
			110304NE				0.4	3.3			●		
			110308NE				0.8	3.0			●		
		TPGB	110302				0.2	3.9			●	●	
			110304				0.4	3.7			●	●	
			110308				0.8	3.4			□	●	
 Small Edge		TPGB	160301SE	9.525	3.18	4.5	0.1	2.6				●	F43 F45 F47
			160302SE				0.2	2.6			●	●	
			160304SE				0.4	2.4			●	●	
		TPGB	160302NE				0.2	3.3			●		
			160304NE				0.4	3.2			●		
			160308NE				0.8	2.9			●		
		TPGB	160302				0.2	3.9			□	□	
			160304				0.4	3.7			□	□	
			160308				0.8	3.4			□	□	

・SE: Small Edge / NE: New Value Edge.

● : Std. Item (1 pc boxes)
□ : Check Availability

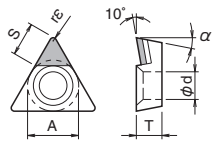
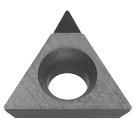
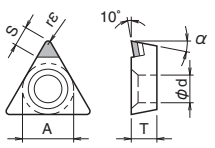
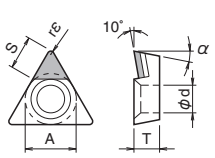
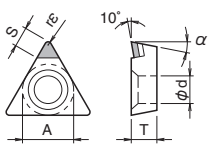
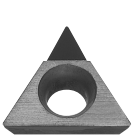
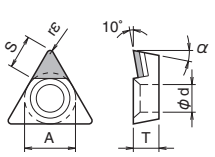
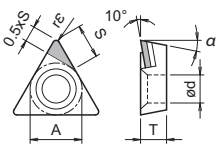
CBN & PCD Tools are sold in 1 piece boxes.

Positive

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

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

Edge Prep.: All Items / Sharp Edge

Insert (Handed insert indicates Left-hand)	Description	Dimension (mm) A	T	ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
 	TPMH 080201NE	4.76	2.38	2.3	0.1	2.3	11 °	1	●		E27 F45 F48
	TPMH 080202NE				0.2	2.2			●		
	TPMH 080204NE				0.4	2.1			●		
	TPMH 080208NE				0.8	1.8			□		
	TPMH 080201				0.1	2.6				●	
	TPMH 080202				0.2	2.5			●	●	
	TPMH 080204				0.4	2.3			●	●	
	TPMH 080208				0.8	2.0			□	□	
	TPMH 090201NE	5.56	2.38	3.0	0.1	2.7			●		F43 F45 F48
	TPMH 090202NE				0.2	2.6			●		
	TPMH 090204NE				0.4	2.5			●		
	TPMH 090208NE				0.8	2.2			●		
	TPMH 090201				0.1	3.0			●	●	
	TPMH 090202				0.2	2.9			●	●	
	TPMH 090204				0.4	2.8			●	●	
	TPMH 090208				0.8	2.5			□	●	
 Small Edge 	TPMH 110301SE	6.35	3.18	3.3	0.1	2.7			□	●	E27 F43 F45 F47
	TPMH 110302SE				0.2	2.6			●	●	
	TPMH 110304SE				0.4	2.5			●	●	
 	TPMH 110301NE				0.1	3.4			●		
	TPMH 110302NE				0.2	3.3			●		
	TPMH 110304NE				0.4	3.2			●		
	TPMH 110308NE				0.8	2.9			●		
	TPMH 110301				0.1	3.9			●	●	
	TPMH 110302				0.2	3.9			●	●	
	TPMH 110304				0.4	3.7			●	●	
	TPMH 110308				0.8	3.4			□	●	
 Small Edge 	TPMH 160301SE	9.525	3.18	4.5	0.1	2.6			□	●	F43 F45 F47
	TPMH 160302SE				0.2	2.6			●	●	
	TPMH 160304SE				0.4	2.4			●	●	
 	TPMH 160301NE				0.1	3.5			●		
	TPMH 160302NE				0.2	3.4			●		
	TPMH 160304NE				0.4	3.3			●		
	TPMH 160308NE				0.8	3.0			●		
	TPMH 160301				0.1	4.1				□	
	TPMH 160302				0.2	4.0			●	●	
	TPMH 160304				0.4	3.8			●	●	
	TPMH 160308				0.8	3.6				●	
 	TPMH 110302R/L-NE	6.35	3.18	3.3	0.2	3.8			L		E27 F43 F45 F47
	110304R/L-NE				0.4	3.6			L		

・SE: Small Edge / NE: New Value Edge.

● : Std. Item (1 pc boxes)
L : Std. Item (L-hand Only)
□ : Check Availability

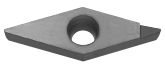
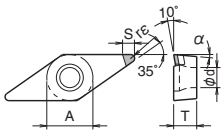
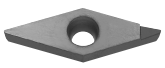
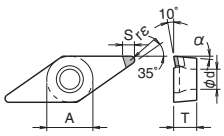
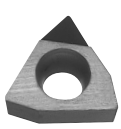
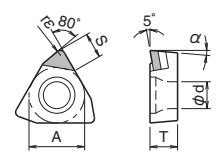
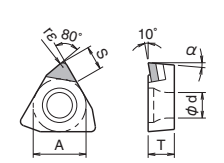
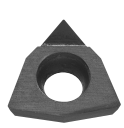
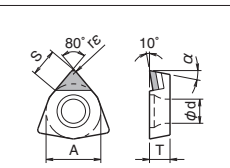
CBN & PCD Tools are sold in 1 piece boxes.

Positive

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

		KPD001	KPD010
N	Non-ferrous Metals (with interruption)	◔	
	Non-ferrous Metals (without interruption)	●	
S	Titanium Alloy (with interruption)	◔	
	Titanium Alloy (without interruption)	●	

Edge Prep.: All Items / Sharp Edge

Insert (Handed insert indicates Left-hand)	Description	Dimension (mm) A	T	ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
 	VBMT 110301NE	6.35	3.18	2.8	0.1	2.6	5 °	1	●		
	VBMT 110302NE				0.2	2.4			●		E28
	VBMT 110304NE				0.4	2.0			●		E29
	VBMT 110308NE				0.8	3.1			●		E35
	VBMT 110301				0.1	3.0			●	●	F51
	VBMT 110302				0.2	2.8			●	●	F53
	VBMT 110304				0.4	2.4			●	●	F55
	VBMT 110308				0.8	3.5			●	●	
	VBMT 160401NE	9.525	4.76	4.4	0.1	2.8			●		
	VBMT 160402NE				0.2	2.6			●		
	VBMT 160404NE				0.4	2.2			●		E28
	VBMT 160408NE				0.8	3.0			●		E29
	VBMT 160404SE				0.4	2.0				●	F51
	VBMT 160401				0.1	3.2			●	●	F53
	VBMT 160402				0.2	3.0			●	●	F55
	VBMT 160404				0.4	2.6			●	●	
	VBMT 160408				0.8	3.5			●	●	
 	VCMT 080201NE	4.76	2.38	2.3	0.1	1.7	7 °	1	●		
	VCMT 080202NE				0.2	1.7			●		
	VCMT 080204NE				0.4	1.8			●		E35
	VCMT 080208NE				0.8	1.9			●		F51
	VCMT 080201				0.1	2.0			●	●	F53
	VCMT 080202				0.2	2.0			●	●	F55
	VCMT 080204				0.4	2.1			●	●	
	VCMT 080208				0.8	2.2			●	●	
 	WBMT 060101L-NE	3.97	1.59	2.3	0.1	1.7	5 °	1	●		
	WBMT 060102L-NE				0.2	1.6			●		
	WBMT 060104L-NE				0.4	1.6			●		
	WBMT 060101L				0.1	1.9			●	●	
	WBMT 060102L				0.2	1.9			●	●	
	WBMT 060104L				0.4	1.9			●	●	
	WBMT 080202L-NE	4.76	2.38	2.3	0.2	2.1			●		
	WBMT 080204L-NE				0.4	2.1			●		F57
	WBMT 080202L				0.2	2.4			●	●	F59
	WBMT 080204L				0.4	2.3			●	●	
 	WPMT 110201NE	6.35	2.38	2.8	0.1	2.7	11 °	1	□		
	WPMT 110202NE				0.2	2.7			●		
	WPMT 110204NE				0.4	2.7			●		
	WPMT 110201				0.1	3.0				□	
	WPMT 110202				0.2	3.1				●	
	WPMT 110204				0.4	3.1				□	

・SE: Small Edge / NE: New Value Edge.

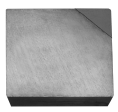
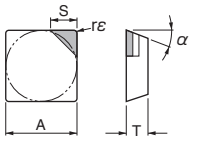
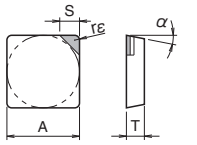
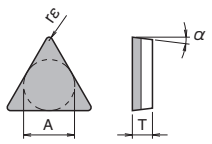
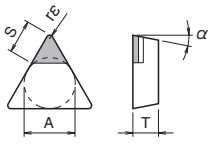
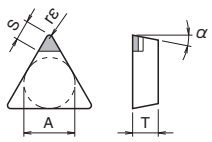
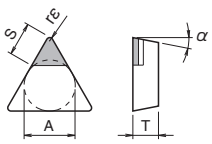
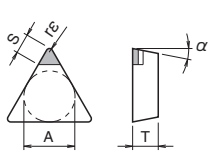
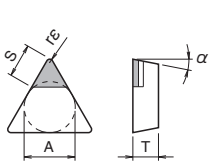
● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

Positive

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

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

Edge Prep.		Insert		Description		Dimension (mm)					Angle (°)	No. of Edges	PCD		Ref. Page for Toolholder
All Items	Sharp Edge					A	T	ød	rε	S	α		KPD001	KPD010	
				SEGN	120304NE	12.70	3.18	-	0.4	3.6	20 °	1	●		-
					120304					4.2				□	
				SPGN	120304NE	12.70	3.18	-	0.4	3.6	11 °	1	●		E36 F60
					120304					4.2				●	
	PCD surface type			TBGN	060102	3.97	1.59	-	0.2	-	5 °	3		□	-
					060104				0.4					□	
				TPGN	090202NE	5.56	2.38	-	0.2	3.3	11 °	1	□		F61
					090204NE				0.4	3.2			●		
					090208NE				0.8	2.9			□		
				TPGN	090202				0.2	3.9				□	
					090204				0.4	3.7				●	
					090208				0.8	3.4				□	
	Small Edge			TPGN	110301SE	6.35	3.18	-	0.1	2.6			●	●	E37 F61
					110302SE				0.2	2.5			●	●	
					110304SE				0.4	2.4			●	●	
				TPGN	110302NE				0.2	3.4			●		
					110304NE				0.4	3.2			●		
					110308NE				0.8	2.9			●		
				TPGN	110302				0.2	3.9			●	●	
					110304				0.4	3.7			●	●	
					110308				0.8	3.4				●	
	Small Edge			TPGN	160301SE	9.525	3.18	-	0.1	2.6				●	
					160302SE				0.2	2.6			●	●	
					160304SE				0.4	2.4			●	●	
				TPGN	160302NE				0.2	3.3			●		
					160304NE				0.4	3.2			●		
					160308NE				0.8	2.9			●		
				TPGN	160302				0.2	3.9			●	●	
					160304				0.4	3.7			●	●	
					160308				0.8	3.4				●	

・SE: Small Edge / NE: New Value Edge.

● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

Grooving Inserts (1-Edge)

Edge Prep.: All Items / Sharp Edge

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

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

Insert (Handed Insert shows Right-hand)	Description	(Previous Description)	W	B	rε	A	T	ød	S	No. of Edges	PCD KPD001 R	PCD KPD001 L	PCD KPD010 R	PCD KPD010 L	Ref. Page for Toolholder
External / Internal Grooving	GBA32R/L 125-010	GBA32R/L 125	1.25	2.0	0.1	9.525	3.18	4.4	1.7	1			●		
	GBA32R/L 150-010	GBA32R/L 150	1.50								●		●		
	GBA43R/L 125-010	GBA43R/L 125	1.25	2.0									●	●	G13
	GBA43R/L 150-010	GBA43R/L 150	1.50	3.5							●	●	●	●	G15
	GBA43R/L 200-010	GBA43R/L 200	2.00		0.1	12.70	4.76	5.5	1.9		●	●	●	●	G55
	GBA43R/L 250-010	GBA43R/L 250	2.50	4.0							●	●	●	●	
	GBA43R/L 300-010	GBA43R/L 300	3.00								●	●	●	●	
External Grooving	GB43R/L 125	-	1.25	2.0									□	□	
	GB43R/L 150	-	1.50	3.5									□	□	
	GB43R/L 200	-	2.00		0.1	12.70	4.76	-	1.9	1			□	□	G15
	GB43R/L 250	-	2.50	4.0									□	□	
	GB43R/L 300	-	3.00										□	□	
External Grooving	TGF32R/L 125-010	-	1.25	2.0					1.7		●				
	TGF32R/L 150-010	-	1.50		0.1	9.525	3.18	4.5		1	●				
	TGF32R/L 200-010	-	2.00	2.5					1.9		●				G16
	TGF32R/L 125	-	1.25	2.0					1.7		□		□		
	TGF32R/L 150	-	1.50		C0.1	9.525	3.18	4.5		1	□		□		
	TGF32R/L 200	-	2.00	2.5					1.9		□		□		

Insert (Handed Insert shows Right-hand)	Description	(Previous Description)	W	B	rε	A	L	H	No. of Edges	PCD KPD001 R	PCD KPD001 L	PCD KPD010 R	PCD KPD010 L	Ref. Page for Toolholder
Internal Grooving	GVR/L 145-020A	GVR/L 145A	1.45	2.3	0.2	4.0	12	5.0	1			●	□	
	GVR/L 200-020A	GVR/L 200A	2.00									●	□	
	GVR/L 300-020A	GVR/L 300A	3.00									□	□	
	GVR/L 200-020B	GVR/L 200B	2.00	3.2	0.2	4.5	15	5.5				●	□	G52
	GVR/L 250-020B	GVR/L 250B	2.50									●	□	G53
	GVR/L 300-020B	GVR/L 300B	3.00	4.2								□	□	
	GVR/L 300-020C	GVR/L 300C	3.00	4.5	0.2	5.8	21	6.5				□	□	
	GVR/L 400-020C	GVR/L 400C	4.00	5.5								□	□	
Face Grooving	GVFR/L 250-020B	GVFR/L 250B	2.50	4.8	0.2	5.8	20	5.0	1			●	●	G78 ~ G83 G88
	GVFR/L 300-020B	GVFR/L 300B	3.00	4.8								●	●	
	GVFR/L 400-020B	GVFR/L 400B	4.00	5.3								□	□	
	GVFR/L 350-020C	-	3.50	6.8	0.2	7.0	27	7.0				□	□	
	GVFR/L 400-020C	-	4.00	6.8								□	□	
	GVFR/L 350-040C	GVFR/L 350C	3.50	6.8	0.4	7.0	27	7.0				□	□	
	GVFR/L 400-040C	GVFR/L 400C	4.00	6.8								□	□	

Insert	Description	(Previous Description)	W	rε	L	H	M	S	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
External Grooving (S=2.9)	GMN 2	-	2.0	0.2	20	4.3	1.8	2.9	1	●	●	G36,G37
	GMN 3	-	3.0				2.3			●	●	G36 G37 G38
	GMN 4	-	4.0				3.3			●	●	
	GMN 5	-	5.0				4.2			●	●	
	GMN 6	-	6.0				5.2				●	G37,G38

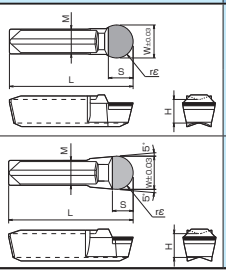
CBN & PCD Tools are sold in 1 piece boxes.

● : Std. Item (1 pc boxes)
□ : Check Availability

For Aluminum Wheel (1-Edge)

Classification of usage				
●: Light Interruption / 1st Choice ◔: Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice	N	Non-ferrous Metals (with interruption)	◔	
		Non-ferrous Metals (without interruption)	●	
	S	Titanium Alloy (with interruption)	◔	
		Titanium Alloy (without interruption)	●	

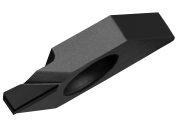
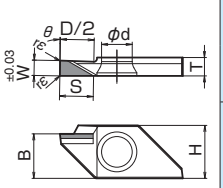
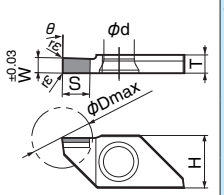
Edge Prep.	
All Items	Rounded Cutting Edge (Hone)

Insert		Description		Dimension (mm) W	rε	L	H	M	S	No. of Edges	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
		GMGW	6030-30R	6	3	30	5.5	5	4.5	1	□		G40
			8030-40R	8	4			6	6		□		
		GMGW	8030-40R-HR	8	4	30	5.5	6	5		□		

Traversing / Grooving Inserts (1-Edge)

Classification of usage				
●: Light Interruption / 1st Choice ◔: Light Interruption / 2nd Choice ●: Continuous / 1st Choice ○: Continuous / 2nd Choice	N	Non-ferrous Metals (with interruption)	◔	
		Non-ferrous Metals (without interruption)	●	
	S	Titanium Alloy (with interruption)	◔	
		Titanium Alloy (without interruption)	●	

Edge Prep.	
All Items	Sharp Edge

Insert Handed Insert shows Right-hand		Description		Dimension (mm) W	øD max	rε	T	H	ød	S	Angle (°) θ*	No. of Edges	PCD KPD001 R	PCD KPD001 L	PCD KPD010 R	PCD KPD010 L	Ref. Page for Toolholder
 Grooving Inserts		TKF12R/L	200-AS	2.0	10	+0 -0.05 0.1	3	8.7	5	5.0	0°	1	●	●			H8
			250-AS	2.5	10					5.5			●	●			
		TKF16R/L	250-AS	2.5	16		4	9.5	5	6.5	0°	1	●	●			
 External Grooving (Traversing)		TKF12R/L	150-NB	1.5	7	+0 -0.05 0.1	3	8.7	5	2.0	0°	1	●	●			
			200-NB	2.0	8					3.0			●	●			
			250-NB	2.5	8					3.0			●	□			
			250-NB4.5	2.5	10					4.5			●	□			

* Relief angle (Front cutting edge angle: θ) represents the angle when installed in the toolholder.

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

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

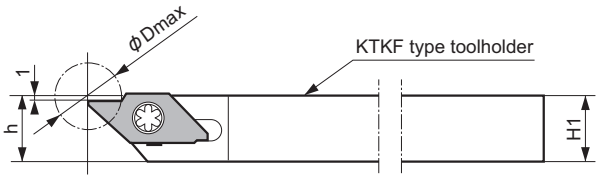


Fig.1 When a TKF-AS insert is attached (The cutting edge is 1 mm lower than the center line.)

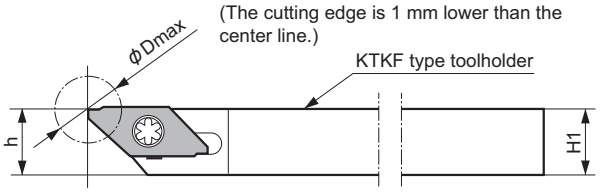


Fig.2 When a TKF-NB insert is attached

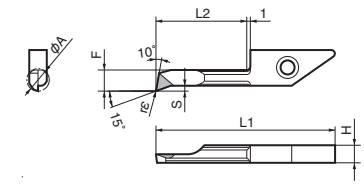
● : Std. Item (1 pc boxes)
□ : Check Availability

CBN & PCD Tools are sold in 1 piece boxes.

System Tip-Bars

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

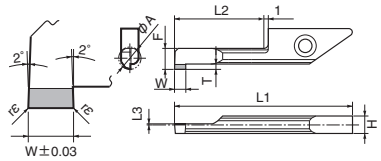
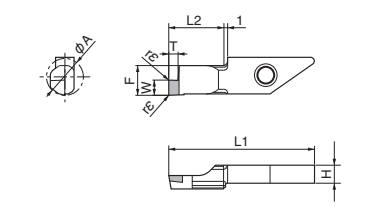
N	Non-ferrous Metals (with interruption)	◔				
	Non-ferrous Metals (without interruption)	●				
S	Titanium Alloy (with interruption)	◔				
	Titanium Alloy (without interruption)	●				

Edge Prep.		Min.Bore Dia.	Dimension (mm)							No. of Edges	PCD		Ref. Page for Toolholder
All Items	Sharp Edge												
Insert Handed Insert shows Right-hand	Description	øA	H	L1	L2	F	S	rε			KPD001	KPD010	
 Micro Boring	VNBR 0411-02NB	4	3.9	30.8	11	3.5	0.5	0.2		1	R	R	F16 F17 F18
	0420-02NB			39.8	20						R	R	
	VNBR 0511-02NB	5	3.9	30.8	11	4.5	0.7	0.2			R	R	
	0520-02NB			39.8	20						R	R	
	VNBR 0620-02NB	6	3.9	39.8	20	5.3	1.0	0.2			R	R	
	0630-02NB			49.8	30						R	R	
	VNBR 0720-02NB	7	3.9	39.8	20	6.2	1.0	0.2			R	R	
	0730-02NB			49.8	30						R	R	

System Tip-Bars

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

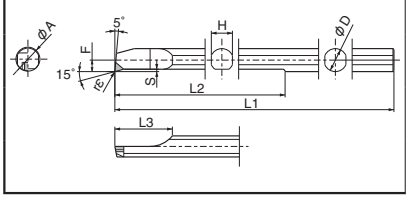
N	Non-ferrous Metals (with interruption)	◔	
	Non-ferrous Metals (without interruption)	●	
S	Titanium Alloy (with interruption)	◔	
	Titanium Alloy (without interruption)	●	

Edge Prep.		Min.Bore Dia.	Dimension (mm)									No. of Edges	PCD		Ref. Page for Toolholder
All Items	Sharp Edge														
Insert Handed Insert shows Right-hand	Description	øA	W	rε	H	L1	L2	L3	F	T			KPD001	KPD010	
 Micro Grooving	VNGR 0410-11NB	4	1.0	0.05	3.9	30.8	11	0.1	3.5	0.8		1	□	□	F16 F17 F18
	0420-11NB		2.0	0.10									□	□	
	VNGR 0510-11NB	5	1.0	0.05	3.9	30.8	11	0.1	4.4	1.0			□	□	
	0520-11NB		2.0	0.10									□	□	
	VNGR 0610-20NB	6	1.0	0.05	3.9	39.8	20	0.3	5.2	1.8			□	□	
	0620-20NB		2.0	0.10									□	□	
	VNGR 0710-20NB	7	1.0	0.05	3.9	39.8	20	0.3	6.2	2.0			□	□	
	0720-20NB		2.0	0.10									□	□	
 Micro Face Grooving	VNFGR 0820-10NB	8	2.0	0.05	3.9	39.8	10	-	7.3	2.0		1	□	□	
	0830-10NB	8	3.0							3.0			□	□	

Tip-Bars

Classification of usage
●: Light Interruption / 1st Choice
◔: Light Interruption / 2nd Choice
●: Continuous / 1st Choice
○: Continuous / 2nd Choice

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

Edge Prep.		Min.Bore Dia.	Dimension (mm)								No. of Edges	PCD		Ref. Page for Toolholder
All Items	Sharp Edge													
Insert Handed Insert shows Right-hand	Description	øA	øD	H	L1	L2	L3	F	S	rε		KPD001	KPD010	
	PSB R/L 0404-60NBS	4	3.8	3.6	60	30	10	1.9	0.3	0.05	1	R	R	F25
	0505-70NBS	5	4.8	4.4	70	40	12	2.4	0.5			R	R	
	0606-70NBS	6	5.8	5.2		45		2.9				R	R	
	0707-80NBS	7	6.8	6.2	80	50		3.4				R	R	

● : Std. Item (1 pc boxes)
R : Std. Item (R-hand Only)
□ : Check Availability

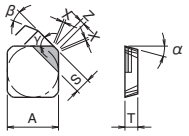
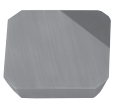
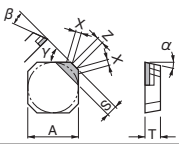
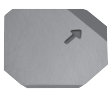
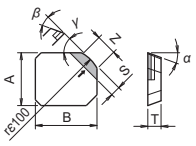
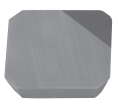
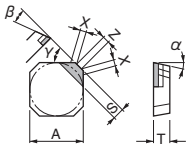
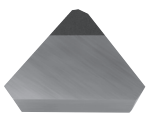
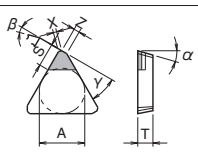
CBN & PCD Tools are sold in 1 piece boxes.

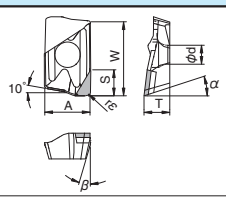
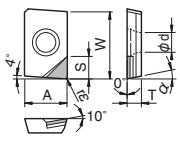
Milling Inserts

Edge Prep. — All Items / Sharp Edge

Classification of usage
■ : Light Interruption / 1st Choice
□ : Light Interruption / 2nd Choice

N	Non-ferrous Metals (with interruption)	□		■
S	Titanium Alloy (with interruption)	□		■

Insert	Description	Dimension (mm) A	T	X	Z	S		Angle (°) α	β	γ	No. of Edges	PCD KPD001	KPD010	KPD230	Ref. Page for Toolholder
 	SDKN 1203AUFN-NE	12.70	3.18	0.5	1.2	3.1		15°	23°	45°	1	●			M35
	1203AUFN					3.6						●	●		
 	SEEN 1203AFFN-NE	12.70	3.18	0.5	1.4	3.0		20°	25°	45°	1	●			M30 M31 M32
	1203AFFN					3.5						●	●		
 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	●		●	M95
	1603PTFR					4.7						●	●		
	TEKN 2204PTFR-NE	12.70	4.76	0.7	1.8	4.2		20°	22°	30°	1	●		●	M44
	2204PTFR					4.8						●	●		M45

Insert	Description	Dimension (mm) A	T	ød	W	rε	S	Angle (°) α	β		No. of Edges	PCD KPD001	KPD010	KPD230	Ref. Page for Toolholder
 	BDMT 11T302FR	6.7	3.8	2.8	11.0	0.2	3.6	18°	13°		1	●		●	
	11T304FR					0.4						●		●	M48 M49
	BDMT 170402FR	9.6	4.9	4.4	17.0	0.2	4.4	18°	13°		1	●		●	M50
	170404FR					0.4						●		●	
 	NDCW 150302FRX-NE	9.525	3.18	4.4	15.0	0.2	5.1	15°	-		1	●		●	M93
	150302FRX						5.7					●	●		

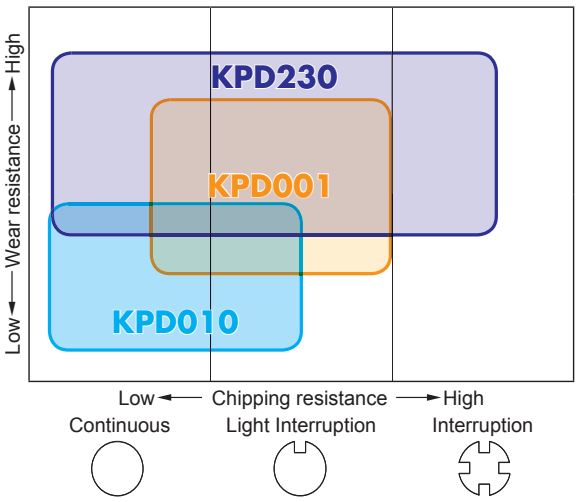
・SE: Small Edge / NE: New Value Edge.

● : Std. Item (1 pc boxes)

CBN & PCD Tools are sold in 1 piece boxes.

Recommended Cutting Conditions

Application Map



Insert Grade	Applications	Features
KPD001 (Ave. Grain Size under 0.5μm)	●High speed machining of non-ferrous metals and brass ●High speed machining of glass fiber and plastics ●Machining of carbide and ceramics	●The world highest level micro-grain diamond ●High edge strength, and superior to wear resistance, chipping resistance and edge sharpening performance
KPD230 (Mixture of fine grain with the ave. grain size 2-30μm and rough grain)	●High speed milling of aluminum alloy and non ferrous metals such as brass ●High speed milling of glass fiber and plastics	●High-density carbide with mixture of rough and fine grains features excellent abrasive wear resistance and chipping resistance.

Insert Grade	Applications	Features
KPD010 (Ave. Grain Size 10μm)	●High speed machining of non-ferrous metals and brass ●High speed machining of glass fiber and plastics ●Machining of carbide and ceramics	●Good balance of wear resistance and flexural strength ●General Purpose

Recommended Cutting Conditions (Turning)

Workpiece Material	Insert Grade		Cutting Conditions				Remarks
	KPD001	KPD010	Vc (m/min)	*a*p (mm) Small edge and Positive (Insert)	*a*p (mm) Negative (Inserts)	f (mm/rev)	
Aluminum Alloys Zinc Alloys	★	☆	300~1500	~1.0	~2.0	0.03~0.5	Both Dry and Coolant 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 Plastic 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