THE NEW VALUE FRONTIER

KYOCERA

Kyocera's new innovative CBN tools

MEGACOAT CBN

NEW

KBN10M/KBN25M/KBN65M
KBN10C/KBN25C

ADVANCING PRODUCTIVITY

Kyocera's new innovative CBN tools

MEGACOAT CBN

Introducing four new PVD coating materials that exhibit superior features compared to our popular KBN series.

NEW

KBN10M/KBN25M/KBN65M

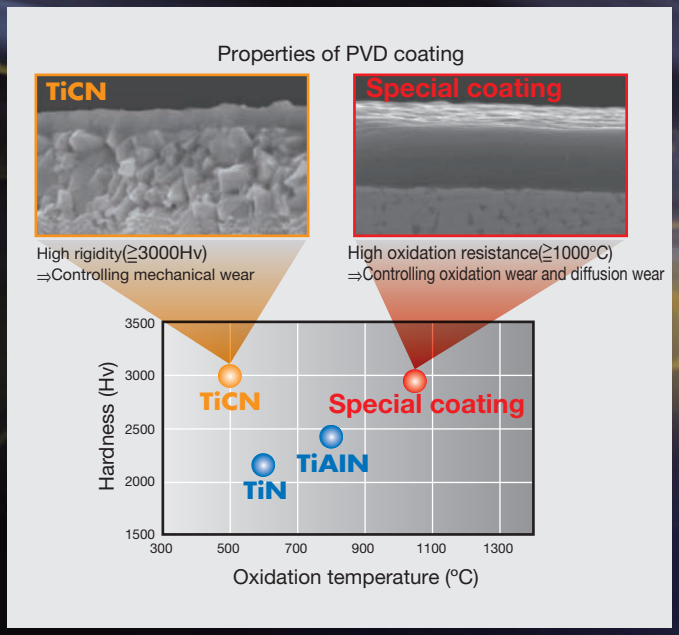
Special PVD coating CBN

Special PVD coating:
Controlling crater wear with superior oxidation resistance, and actualize stable machining.

KBN10C / KBN25C

TiCN PVD coating CBN

TiCN PVD coating:
Wear resistance and finish quality have been improved with high rigidity and excellent smoothness.



KBN25M for the interrupted machining of alloy steel (high hardness) / die steel (high hardness) **KBN25M**

KBN25C for the continuous machining of alloy steel (high hardness) **KBN25C**

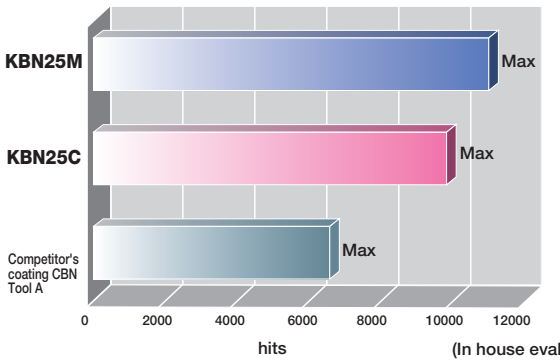
KBN10M for die steel (high hardness) **KBN10M**

KBN10C for the continuous machining of die steel (high hardness) **KBN10C**

NEW KBN65M for sintered metal (high hardness) **KBN65M**

■Comparison of fracture resistance (Light interruption)

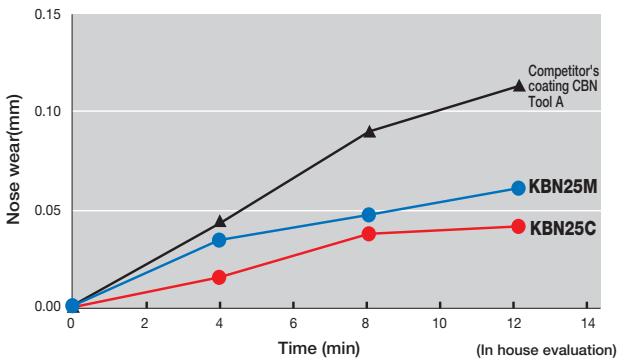
Cutting condition:
Vc=150m/min, ap=0.2mm, f=0.15mm/rev, Dry
Work piece:
SCM415H(Carburizing and quenching:58~62HRC)With hole



(In house evaluation)

■Comparison of fracture resistance

Cutting condition:
Vc=200m/min, ap=0.2mm, f=0.1mm/rev, Wet
Work piece:
SCM415H(Carburizing and quenching:58~62HRC)

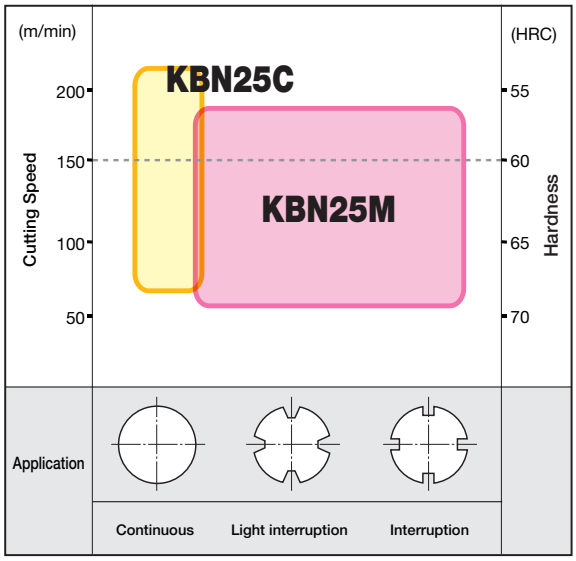


(In house evaluation)

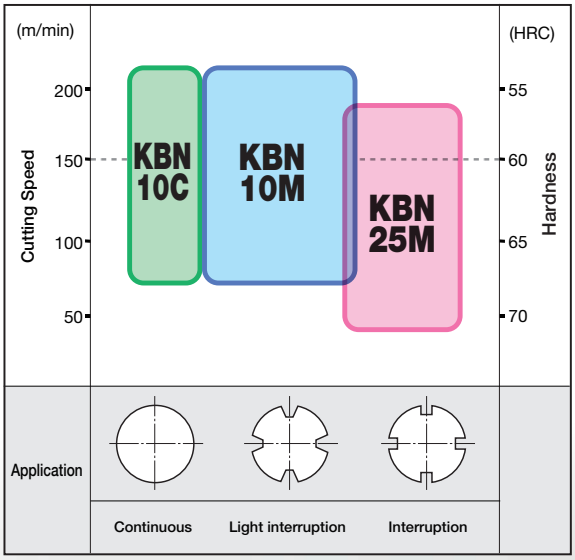
MEGACOAT CBN can provide extended tool life, stabilization and accelerated speeds.

Extended Tool Life | **Stabilization** | **Accelerated Speeds**

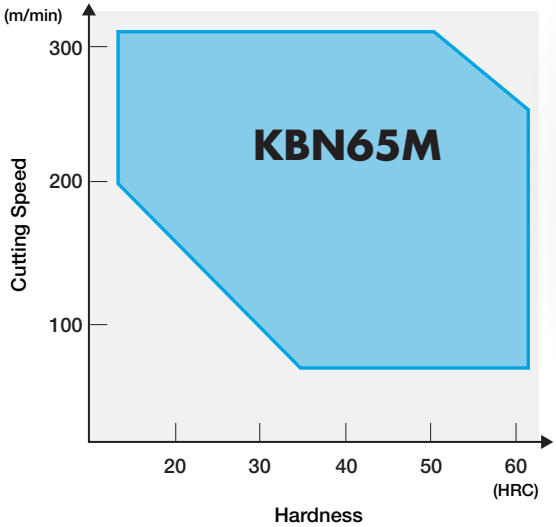
■Alloy Steel
(The layer of high hardness is thin.)



■Die steel
(The layer of high hardness is thick.)



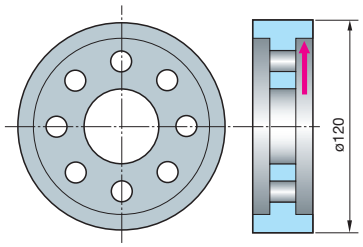
■Sintered Metal



■Case Studies

SCM420 60HRC

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



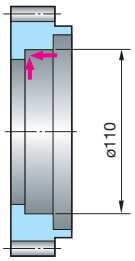
KBN25M	70 pcs/edge
Competitor B (CBN tool)	30 pcs/edge (Unstable)

KBN25M improved tool life up to 70 pieces/edge that 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)

SCM420 58HRC

- Gear parts
- Vc=170m/min
- ap=0.3mm
- f=0.2mm/rev
- Wet⇒Dry
- CNGA120412S01215MEW (KBN25M)



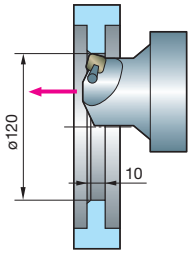
KBN25M	250 pcs/edge (Stable)
Competitor C (CBN tool)	250 pcs/edge (Unstable) Many corrections

Competitor's (CBN tool) C required many corrections in order to accomplish 250 pieces/edge, and its tool life was not stable. KBN25M (with wiper edge) exhibited good wear resistance and the edge condition is capable of further extension of tool life.

(Evaluation by the user)

SCM420 61~65HRC

- Ring gear
- Vc=170m/min
- ap=0.15mm
- f=0.21mm/rev
- Wet
- SNGA120412 (KBN25M)



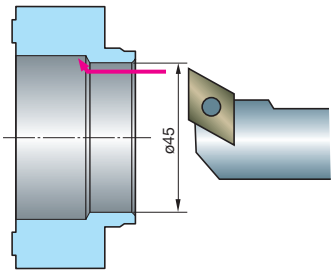
KBN25M	More than 400 pcs/edge
Conventional D	200 pcs/edge

KBN25M has a good wear resistance, and it could extend its tool life two times more than conventional D. (Tool life is determined by the surface roughness.)

(Evaluation by the user)

SCr420H 58HRC

- Sun gear
- Vc=100m/min
- ap=0.5mm
- f=0.1mm/rev
- Dry
- DNGA150408S01225ME (KBN25M)



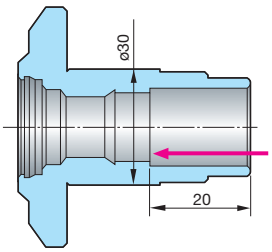
KBN25M	600 pcs/edge (Stable)
Competitor E (CBN tool)	400 pcs/edge

Competitor's E causes chattering when wear progresses, and the finished surface became worse. KBN25M has extended its tool life up to 1.5 times more, and the condition remained good without having chattering.

(Evaluation by the user)

SCM420 50HRC

- Gear parts
- Vc=120m/min
- ap=0.5~1.0mm
- f=0.08mm/rev
- Wet
- TNGA160408S01730MET (KBN25C)



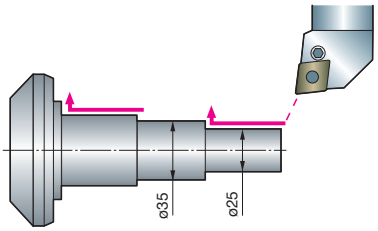
KBN25C	More than 450 pcs/edge
Conventional F	350 pcs/edge (Unstable)

KBN25C has excelled in its wear resistance and improved its tool life up to 1.5 times more than conventional F.

(Evaluation by the user)

SCM420 (Vacuum carburizing and quenching) 60HRC

- Gear shaft
- Vc=140m/min
- ap=0.3mm
- f=0.14mm/rev
- Dry
- CNGA120408S01215MEW (KBN10M)



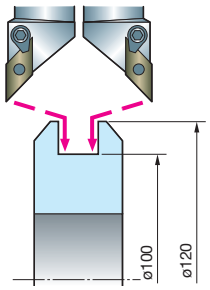
KBN10M	More than 300 pcs/edge
Conventional G	100 pcs/edge

KBN10M (with wiper edge) has good relief wear and exhibits stable surface roughness; in addition, tool life improved three times more than before.

(Evaluation by the user)

SCr420H 58HRC

- Sleeve
- Vc=110~130m/min
- ap=0.15mm
- f=0.1mm/rev
- Wet
- VNGA160408S01225ME (KBN10M)



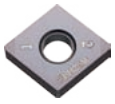
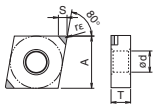
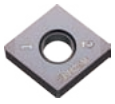
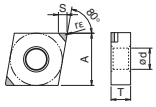
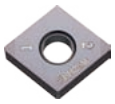
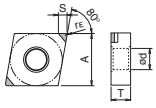
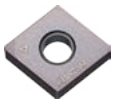
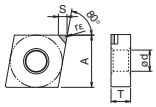
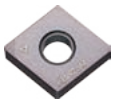
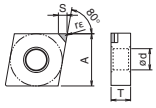
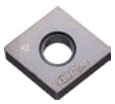
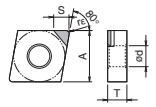
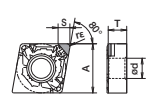
KBN10M	More than 1500 pcs/edge
Competitor H (CBN tool)	1500 pcs/edge

KBN10M has reduced wear amount and exhibited good surface roughness; in addition, it could extend its tool life.

(Evaluation by the user)

■Stock Items

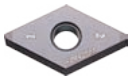
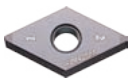
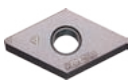
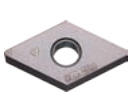
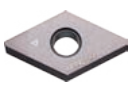
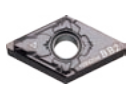
Edge Preparation				Indication of clasification	K	Sintered Metal					
Symbol	Cutting edge condition	Indication		◕:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)		◔		◕	
T	Chamfer Cutting Edge	T01215	0.12mm X 15° Chamfer Cutting Edge			Hardened material (finishing)	○		●		
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)			●	◕	

Shape		Description	Previous Description	Edge Prep.	Dimension (mm)					No. of Edge	PVD coated CBN				
					A	T	ød	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Multi Edge/With Wiper Edge		CNGA 120404S01215MEW 120408S01215MEW 120412S01215MEW	CNGA 120404MEW 120408MEW 120412MEW	S01215	12.70	4.76	5.16	0.4 0.8 1.2	2.6 2.5 2.5	2	● ● ●	● ● ●	● ● ●	● ● ●	
 Multi Edge		CNGA 120402S01225ME 120404S01225ME 120408S01225ME 120412S01225ME	CNGA 120402ME 120404ME 120408ME 120412ME	S01225	12.70	4.76	5.16	0.2 0.4 0.8 1.2	2.6 2.5 2.6 2.5	2	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	
		CNGA 120404T01215ME 120408T01215ME 120412T01215ME	- - -	T01215	12.70	4.76	5.16	0.4 0.8 1.2	2.5 2.6 2.5	2					● ● ●
 Multi Edge/Tough		CNGA 120404S01730MET 120408S01730MET 120412S01730MET	CNGA 120404ME-T 120408ME-T 120412ME-T	S01730	12.70	4.76	5.16	0.4 0.8 1.2	2.5 2.6 2.5	2		● ● ●		● ● ●	
 Small Edge		CNGA 120402S01225SE 120404S01225SE 120408S01225SE 120412S01225SE	CNGA 120402SE 120404SE 120408SE 120412SE	S01225	12.70	4.76	5.16	0.2 0.4 0.8 1.2	2.6 2.5 2.6 2.5	1	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	
 Small Edge/Tough		CNGA 120404S01730SET 120408S01730SET 120412S01730SET	CNGA 120404SE-T 120408SE-T 120412SE-T	S01730	12.70	4.76	5.16	0.4 0.8 1.2	2.6 2.6 2.5	1		● ● ●		● ● ●	
		CNGA 120404S01225 120408S01225 120412S01225	CNGA 120404 120408 120412	S01225	12.70	4.76	5.16	0.4 0.8 1.2	3.7 3.6 3.6	1	● ● ●	● ● ●	● ● ●	● ● ●	
 Chip Control		CNGM 120404S00825BB1 120408S00825BB1 120412S00825BB1	CNGM 120404BB1 120408BB1 120412BB1	S00825	12.70	4.76	5.16	0.4 0.8 1.2	1.8 2.0 2.2	1			● ● ●	● ● ●	
		CNGM 120404S01225BB2 120408S01225BB2 120412S01225BB2	CNGM 120404BB2 120408BB2 120412BB2	S01225	12.70	4.76	5.16	0.4 0.8 1.2	2.2 2.4 2.6	1			● ● ●	● ● ●	
		CNGM 120404S01625BB3 120408S01625BB3 120412S01625BB3	CNGM 120404BB3 120408BB3 120412BB3	S01625	12.70	4.76	5.16	0.4 0.8 1.2	2.6 2.8 3.0	1			● ● ●	● ● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

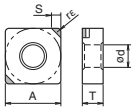
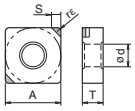
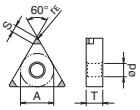
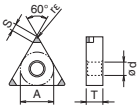
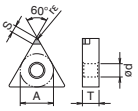
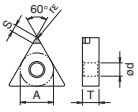
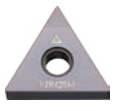
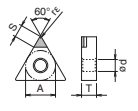
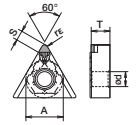
Edge Preparation				Indication of clasification	K	Sintered Metal					
Symbol	Cutting edge condition	Indication		◕:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)		◔		◕	
T	Chamfer Cutting Edge	T01215	0.12mm X 15° Chamfer Cutting Edge			Hardened material (finishing)	○		●		
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)			●	◕	

Shape	Description	Previous Description	Edge Prep.	Dimension (mm)					No. of Edge	PVD coated CBN				
				A	T	ød	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Multi Edge	DNGA 150401S01225ME 150402S01225ME 150404S01225ME 150408S01225ME 150412S01225ME	- DNGA 150402ME 150404ME 150408ME -	S01225	12.70	4.76	5.16	0.1 0.2 0.4 0.8 1.2	2.2 2.5 2.3 1.9 1.9	2	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	
	DNGA 150404T01215ME 150408T01215ME 150412T01215ME	- - -	T01215	12.70	4.76	5.16	0.4 0.8 1.2	2.3 1.9 1.9	2					● ● ●
	DNGA 150604S01225ME 150608S01225ME 150612S01225ME	DNGA 150604ME 150608ME 150612ME	S01225	12.70	6.35	5.16	0.4 0.8 1.2	2.3 1.9 1.9	2	● ● ●	● ● ●	● ● ●	● ● ●	
	DNGA 150604T01215ME 150608T01215ME 150612T01215ME	- - -	T01215	12.70	6.35	5.16	0.4 0.8 1.2	2.3 1.9 1.9	2					● ● ●
 Multi Edge/Tough	DNGA 150404S01730MET 150408S01730MET 150412S01730MET	DNGA 150404ME-T 150408ME-T 150412ME-T	S01730	12.70	4.76	5.16	0.4 0.8 1.2	2.3 1.9 1.9	2		● ● ●		● ● ●	
	DNGA 150604S01730MET 150608S01730MET 150612S01730MET	DNGA 150604ME-T 150608ME-T 150612ME-T	S01730	12.70	6.35	5.16	0.4 0.8 1.2	2.3 1.9 1.9	2		● ● ●		● ● ●	
 Small Edge	DNGA 150401S01225SE 150402S01225SE 150404S01225SE 150408S01225SE 150412S01225SE	DNGA 150401SE 150402SE 150404SE 150408SE 150412SE	S01225	12.70	4.76	5.16	0.1 0.2 0.4 0.8 1.2	2.2 2.5 2.3 1.9 1.9	1	● ● ●	● ● ● ● ●	● ● ●	● ● ● ● ●	
	DNGA 150604S01225SE 150608S01225SE 150612S01225SE	DNGA 150604SE 150608SE 150612SE	S01225	12.70	6.35	5.16	0.4 0.8 1.2	2.3 1.9 1.9	1	● ● ●	● ● ●	● ● ●	● ● ●	
 Small Edge/Tough	DNGA 150404S01730SET 150408S01730SET 150412S01730SET	DNGA 150404SE-T 150408SE-T 150412SE-T	S01730	12.70	4.76	5.16	0.4 0.8 1.2	2.3 1.9 1.9	1		● ● ●		● ● ●	
	DNGA 150404S01225 150408S01225	DNGA 150404 150408	S01225	12.70	4.76	5.16	0.4 0.8	5.8 5.5	1	● ●	● ●	● ●	● ●	
 Chip Control	DNGM 150404S00825BB1 150408S00825BB1 150412S00825BB1	DNGM 150404BB1 150408BB1 150412BB1	S00825	12.70	4.76	5.16	0.4 0.8 1.2	1.6 1.6 1.8	1			● ● ●	● ● ●	
	DNGM 150404S01225BB2 150408S01225BB2 150412S01225BB2	DNGM 150404BB2 150408BB2 150412BB2	S01225	12.70	4.76	5.16	0.4 0.8 1.2	1.8 2.0 2.1	1			● ● ●	● ● ●	
	DNGM 150404S01625BB3 150408S01625BB3 150412S01625BB3	DNGM 150404BB3 150408BB3 150412BB3	S01625	12.70	4.76	5.16	0.4 0.8 1.2	2.2 2.5 2.5	1			● ● ●	● ● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

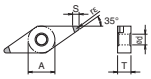
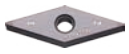
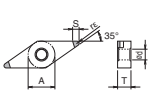
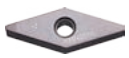
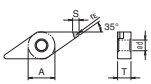
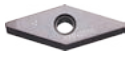
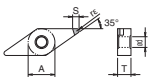
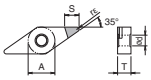
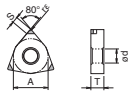
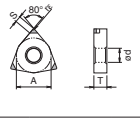
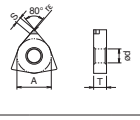
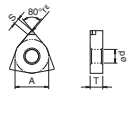
Edge Preparation				Indication of clasification	K	Sintered Metal					
Symbol	Cutting edge condition	Indication		◕:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)		◔		◕	
T	Chamfer Cutting Edge	T01215	0.12mm X 15° Chamfer Cutting Edge			Hardened material (finishing)	○		●		
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)			●	◕	

Shape		Description	Previous Description	Edge Prep.	Dimension (mm)					No. of Edge	PVD coated CBN				
					A	T	ød	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Multi Edge		SNGA 120404S01225ME 120408S01225ME	SNGA 120404ME 120408ME	S01225	12.70	4.76	5.16	0.4 0.8	1.8 1.8	2	● ●	● ●	● ●	● ●	
		SNGA 120404T01215ME 120408T01215ME 120412T01215ME	- - -	T01215	12.70	4.76	5.16	0.4 0.8 1.2	1.8 1.8 2.2	2					● ● ●
 Multi Edge/Tough		SNGA 120404S01730MET 120408S01730MET 120412S01730MET	SNGA 120404ME-T 120408ME-T 120412ME-T	S01730	12.70	4.76	5.16	0.4 0.8 1.2	1.8 1.8 2.2	2		● ● ●		● ● ●	
 Multi Edge		TNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME 160412S01225ME	- TNGA 160402ME 160404ME 160408ME 160412ME	S01225	9.525	4.76	3.81	0.1 0.2 0.4 0.8 1.2	2.6 2.5 2.4 2.4 2.1	3	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	
		TNGA 160404T01215ME 160408T01215ME 160412T01215ME	- - -	T01215	9.525	4.76	3.81	0.4 0.8 1.2	2.4 2.4 2.1	3					● ● ●
 Multi Edge/Tough		TNGA 160404S01730MET 160408S01730MET 160412S01730MET	TNGA 160404ME-T 160408ME-T 160412ME-T	S01730	9.525	4.76	3.81	0.4 0.8 1.2	2.4 2.4 2.1	3		● ● ●		● ● ●	
 Small Edge		TNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE 160412S01225SE	TNGA 160401SE 160402SE 160404SE 160408SE 160412SE	S01225	9.525	4.76	3.81	0.1 0.2 0.4 0.8 1.2	2.6 2.9 2.7 2.4 2.1	1	● ● ●	● ● ● ●	● ● ●	● ● ● ●	
 Small Edge/Tough		TNGA 160404S01730SET 160408S01730SET 160412S01730SET	TNGA 160404SE-T 160408SE-T 160412SE-T	S01730	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1	1		● ● ●		● ● ●	
		TNGA 160404S01225 160408S01225	TNGA 160404 160408	S01225	9.525	4.76	3.81	0.4 0.8	3.8 3.5	1	● ●	● ●	● ●	● ●	
 Chip Control		TNGM 160404S00825BB1 160408S00825BB1 160412S00825BB1	TNGM 160404BB1 160408BB1 160412BB1	S00825	9.525	4.76	3.81	0.4 0.8 1.2	1.5 1.7 1.9	1			● ● ●	● ● ●	
		TNGM 160404S01225BB2 160408S01225BB2 160412S01225BB2	TNGM 160404BB2 160408BB2 160412BB2	S01225	9.525	4.76	3.81	0.4 0.8 1.2	1.9 2.1 2.2	1			● ● ●	● ● ●	
		TNGM 160404S01625BB3 160408S01625BB3 160412S01625BB3	TNGM 160404BB3 160408BB3 160412BB3	S01625	9.525	4.76	3.81	0.4 0.8 1.2	2.2 2.4 2.6	1			● ● ●	● ● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

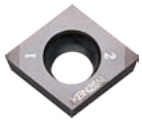
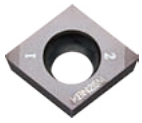
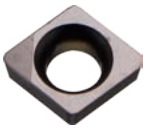
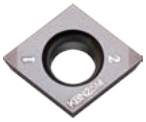
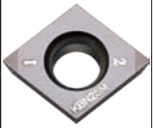
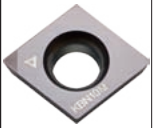
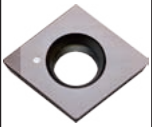
Edge Preparation				Indication of clasification	K	Sintered Metal					
Symbol	Cutting edge condition	Indication		◕:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)		◔		◕	
T	Chamfer Cutting Edge	T01215	0.12mm X 15° Chamfer Cutting Edge			Hardened material (finishing)	○		●		
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)			●	◕	

Shape		Description	Previous Description	Edge Prep.	Dimension (mm)					No. of Edge	PVD coated CBN				
					A	T	ød	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Multi Edge		VNGA 160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME	- VNGA 160402ME 160404ME -	S01225	9.525	4.76	3.81	0.1 0.2 0.4 0.8	2.6 2.3 2.0 1.8	2	● ● ●	● ● ●	● ● ● ●	● ● ● ●	
		VNGA 160404T01215ME 160408T01215ME	- -	T01215	9.525	4.76	3.81	0.4 0.8	2.0 1.8	2					● ●
 Multi Edge/Tough		VNGA 160404S01730MET 160408S01730MET	VNGA 160404ME-T 160408ME-T	S01730	9.525	4.76	3.81	0.4 0.8	2.0 1.8	2	● ●	● ●	● ●	● ●	
 Small Edge		VNGA 160401S01225SE 160402S01225SE 160404S01225SE 160408S01225SE	VNGA 160401SE 160402SE 160404SE 160408SE	S01225	9.525	4.76	3.81	0.1 0.2 0.4 0.8	2.6 2.3 2.7 1.9	1	● ● ●	● ● ● ●	● ● ●	● ● ● ●	
 Small Edge/Tough		VNGA 160404S01730SET 160408S01730SET	VNGA 160404SE-T 160408SE-T	S01730	9.525	4.76	3.81	0.4 0.8	1.9 2.7	1		● ●		● ●	
		VNGA 160404S01225 160408S01225	VNGA 160404 160408	S01225	9.525	4.76	3.81	0.4 0.8	4.9 4.0	1	● ●	● ●	● ●	● ●	
 Multi Edge		WNGA 080404S01225ME 080408S01225ME 080412S01225ME	WNGA 080404ME 080408ME -	S01225	12.70	4.76	5.16	0.4 0.8 1.2	2.0 2.6 2.5	3	● ● ●	● ● ●	● ● ●	● ● ●	
		WNGA 080404T01215ME 080408T01215ME 080412T01215ME	- - -	T01215	12.70	4.76	5.16	0.4 0.8 1.2	2.0 2.6 2.5	3					● ● ●
 Multi Edge/Tough		WNGA 080404S01730MET 080408S01730MET 080412S01730MET	- - -	S01730	12.70	4.76	5.16	0.4 0.8 1.2	2.0 2.6 2.5	3	● ● ●	● ● ●	● ● ●	● ● ●	
 Small Edge		WNGA 080404S01225SE 080408S01225SE	WNGA 080404SE 080408SE	S01225	12.70	4.76	5.16	0.4 0.8	2.0 1.9	1	● ●	● ●	● ●	● ●	
 Small Edge/Tough		WNGA 080404S01730SET 080408S01730SET	WNGA 080404SE-T 080408SE-T	S01730	12.70	4.76	5.16	0.4 0.8	2.0 1.9	1		● ●		● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

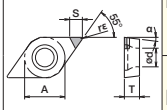
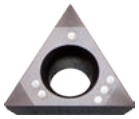
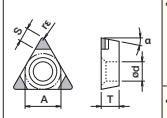
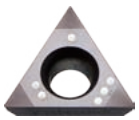
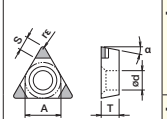
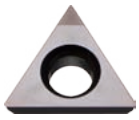
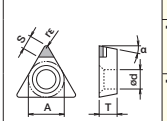
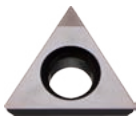
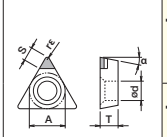
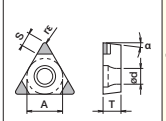
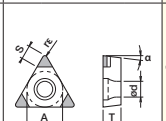
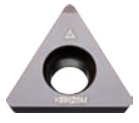
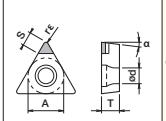
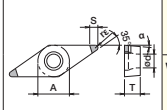
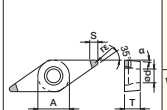
Edge Preparation				Indication of clasification	K	Sintered Metal					
Symbol	Cutting edge condition	Indication		●:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)					
T	Chamfer Cutting Edge	T00815	0.08mm X 15° Chamfer Cutting Edge			Hardened material (finishing)			●	◔	
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)					

Shape	Description	Previous Description	Edge Prep.	Dimension (mm)						No. of Edge	PVD coated CBN				
				A	T	ød	α	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Multi Edge	CCMW 060202T00815ME CCMW 060204T00815ME CCMW 060208T00815ME	CCMW 060202ME CCMW 060204ME CCMW 060208ME	T00815	6.35	2.38	2.8	7°	0.2 0.4 0.8	2.0 1.9 1.8	2			● ● ●	● ● ●	
	CCMW 09T302T00815ME CCMW 09T304T00815ME CCMW 09T308T00815ME	CCMW 09T302ME CCMW 09T304ME CCMW 09T308ME	T00815	9.525	3.97	4.4	7°	0.2 0.4 0.8	2.0 1.9 1.8				● ● ●	● ● ●	 ● ●
 Multi Edge/Tough	CCMW 09T304S01035MET CCMW 09T308S01035MET	CCMW 09T304ME-T -	S01035	9.525	3.97	4.4	7°	0.4 0.8	1.9 1.8	2			● ●	● ●	
 Small Edge	CCMW 030102T00815SE CCMW 030104T00815SE	CCMW 030102SE CCMW 030104SE	T00815	3.5	1.4	1.9	7°	0.2 0.4	1.4 1.4	1			● ●	● ●	
	CCMW 040102T00815SE CCMW 040104T00815SE	CCMW 040102SE CCMW 040104SE	T00815	4.3	1.8	2.3		0.2 0.4	1.4 1.4				● ●	● ●	
	CCMW 060204T00815SE	CCMW 060204SE	T00815	6.35	2.38	2.8		0.4	1.9					●	
	CCMW 09T302T00815SE CCMW 09T304T00815SE	CCMW 09T302SE CCMW 09T304SE	T00815	9.525	3.97	4.4		0.2 0.4	2.0 1.9				● ●		
 Small Edge/Tough	CCMW 030102S01035SET CCMW 030104S01035SET	- CCMW 030104SE-T	S01035	3.5	1.4	1.9	7°	0.2 0.4	1.4 1.4	1			● ●	● ●	
	CCMW 040102S01035SET CCMW 040104S01035SET	- CCMW 040104SE-T	S01035	4.3	1.8	2.3		0.2 0.4	1.4 1.4				● ●	● ●	
 Multi Edge	CPGB 080204T00815ME	CPGB 080204ME	T00815	7.94	2.38	3.5	11°	0.4	1.9	2			●	●	
	CPGB 090302T00815ME CPGB 090304T00815ME	CPGB 090302ME CPGB 090304ME	T00815	9.525	3.18	4.5		0.2 0.4	1.9 1.9				● ●	● ●	
 Multi Edge/Tough	CPGB 080204S01035MET CPGB 080208S01035MET	CPGB 080204ME-T -	S01035	7.94	2.38	3.5	11°	0.4 0.8	1.9 2.2	2			● ●	● ●	
	CPGB 090304S01035MET CPGB 090308S01035MET	CPGB 090304ME-T -	S01035	9.525	3.18	4.5		0.4 0.8	1.9 2.5				● ●	● ●	
 Small Edge	CPGB 090304T00815SE	CPGB 090304SE	T00815	9.525	3.18	4.5	11°	0.4	1.9	1			●		
 Small Edge/Tough	CPGB 080204S01035SET	CPGB 080204SE-T	S01035	7.94	2.38	3.5	11°	0.4	1.9	1				●	
 Multi Edge	DCMW 070202T00815ME DCMW 070204T00815ME DCMW 070208T00815ME	DCMW 070202ME DCMW 070204ME DCMW 070208ME	T00815	6.35	2.38	2.8	7°	0.2 0.4 0.8	1.9 1.7 1.9	2			● ● ●	● ● ●	
	DCMW 11T302T00815ME DCMW 11T304T00815ME DCMW 11T308T00815ME DCMW 11T312T00815ME	DCMW 11T302ME DCMW 11T304ME DCMW 11T308ME DCMW 11T312ME	T00815	9.525	3.97	4.4		0.2 0.4 0.8 1.2	1.9 1.7 1.9 1.9				● ● ● ●	● ● ● ●	 ● ●
 Multi Edge/Tough	DCMW 070202S01035MET DCMW 070204S01035MET DCMW 070208S01035MET	- - -	S01035	6.35	2.38	2.8	7°	0.2 0.4 0.8	1.9 1.7 1.9	2			● ● ●	● ● ●	
	DCMW 11T302S01035MET DCMW 11T304S01035MET DCMW 11T308S01035MET DCMW 11T312S01035MET	DCMW 11T302ME-T DCMW 11T304ME-T DCMW 11T308ME-T -	S01035	9.525	3.97	4.4		0.2 0.4 0.8 1.2	1.9 1.7 1.9 1.9				● ● ● ●	● ● ● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

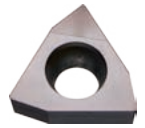
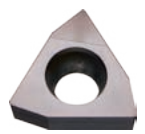
Edge Preparation				Indication of clasification	K	Sintered Metal									
Symbol	Cutting edge condition	Indication		●:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)									◔
T	Chamfer Cutting Edge	T00815	0.08mm X 15° Chamfer Cutting Edge			Hardened material (finishing)								●	◔	
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)										

Shape		Description	Previous Description	Edge Prep.	Dimension (mm)						No. of Edge	PVD coated CBN				
					A	T	ød	α	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Small Edge		DCMW 070202T00815SE 070204T00815SE	DCMW 070202SE 070204SE	T00815	6.35	2.38	2.8	7°	0.2 0.4	1.9 1.7	1			● ●	● ●	
		DCMW 11T308T00815SE	DCMW 11T308SE		9.525	3.97	4.4		0.8	1.9					●	
 Multi Edge		TPGB 110302T00815ME 110304T00815ME 110308T00815ME	TPGB 110302ME 110304ME 110308ME	T00815	6.35	3.18	3.5	11°	0.2 0.4 0.8	2.3 2.1 1.8	3			● ● ●	● ● ●	
		TPGB 160304T00815ME 160308T00815ME	- -	T00815	9.525	3.18	4.5		0.4 0.8	1.8 1.5				● ●	● ●	
 Multi Edge/Tough		TPGB 110302S01035MET 110304S01035MET 110308S01035MET	- - -	S01035	6.35	3.18	3.5	11°	0.2 0.4 0.8	2.3 2.1 1.8	3			● ● ●	● ● ●	
		TPGB 160304S01035MET 160308S01035MET	TPGB 160304ME-T 160308ME-T	S01035	9.525	3.18	4.5		0.4 0.8	1.8 1.5				● ●	● ●	
 Small Edge		TPGB 080202T00815SE 080204T00815SE	TPGB 080202SE 080204SE	T00815	4.76	2.38	2.5	11°	0.2 0.4	1.8 1.6	1			● ●	● ●	
		TPGB 090202T00815SE 090204T00815SE	TPGB 090202SE 090204SE	T00815	5.56	2.38	3.0		0.2 0.4	1.8 1.6				● ●	● ●	
		TPGB 110302T00815SE 110304T00815SE	TPGB 110302SE 110304SE	T00815	6.35	3.18	3.5		0.2 0.4	1.9 1.8				● ●		
		TPGB 160302T00815SE 160304T00815SE	TPGB 160302SE 160304SE	T00815	9.525	3.18	4.5		0.2 0.4	1.9 1.8				● ●		
 Small Edge/Tough		TPGB 080202S01035SET 080204S01035SET	- TPGB 080204SE-T	S01035	4.76	2.38	2.5	11°	0.2 0.4	1.8 1.6	1			● ●	● ●	
		TPGB 090202S01035SET 090204S01035SET	- TPGB 090204SE-T		5.56	2.38	3.0		0.2 0.4	1.8 1.6				● ●	● ●	
 Multi Edge		TPGW 160404T00815ME 160408T00815ME	- -	T00815	9.525	4.76	4.4	11°	0.4 0.8	1.8 1.5	3			● ●	● ●	
 Multi Edge/Tough		TPGW 160404S01035MET 160408S01035MET	TPGW 160404ME-T 160408ME-T	S01035	9.525	4.76	4.4	11°	0.4 0.8	1.8 1.5	3			● ●	● ●	
 Small Edge		TPGW 160408T00815SE	TPGW 160408SE	T00815	9.525	4.76	4.4	11°	0.8	1.5	1				●	
 Multi Edge		VBGW 110302T00815ME 110304T00815ME 110308T00815ME	VBGW 110302ME 110304ME 110308ME	T00815	6.35	3.18	2.8	5°	0.2 0.4 0.8	2.4 2.0 1.7	2			● ● ●	● ● ●	● ●
		VBGW 160402T00815ME 160404T00815ME 160408T00815ME	VBGW 160402ME 160404ME 160408ME	T00815	9.525	4.76	4.4		0.2 0.4 0.8	2.4 2.0 1.7				● ● ●	● ● ●	● ●
 Multi Edge/Tough		VBGW 110302S01035MET 110304S01035MET 110308S01035MET	- VBGW 110304ME-T -	S01035	6.35	3.18	2.8		0.2 0.4 0.8	2.4 2.0 1.7	2			● ● ●	● ● ●	
		VBGW 160402S01035MET 160404S01035MET 160408S01035MET	- VBGW 160404ME-T -	S01035	9.525	4.76	4.4		0.2 0.4 0.8	2.4 2.0 1.7				● ● ●	● ● ●	

●:Std. Stock (1 pc boxes)

■Stock Items

Edge Preparation				Indication of clasification	K	Sintered Metal
Symbol	Cutting edge condition	Indication		●:Light Interruption / 1st choice ◔:Light Interruption / 2nd choice ●:Continuous / 1st choice ○:Continuous / 2nd choice	H	Hardened material (rough)
T	Chamfer Cutting Edge	T00815	0.08mm X 15° Chamfer Cutting Edge			Hardened material (finishing)
S	Chamfered +Honed Cutting Edge	S01035	0.10mm X 35° Chamfer+Honed			Hardened material (short-chips finishing)

Shape	Description	Previous Description	Edge Prep.	Dimension (mm)						No. of Edge	PVD coated CBN				
				A	T	ød	α	rε	S		KBN10C	KBN25C	KBN10M	KBN25M	KBN65M
 Small Edge	VBGW 110302T00815SE 110304T00815SE 110308T00815SE	VBGW 110302SE 110304SE 110308SE	T00815	6.35	3.18	2.8	5°	0.2 0.4 0.8	2.8 2.4 1.7	1			● ● ●	● ● ●	
	VBGW 160404T00815SE	VBGW 160404SE	T00815	9.525	4.76	4.4		0.4	2.0				●		
 Small Edge/Tough	VBGW 110308S01035SET	VBGW 110308SE-T	S01035	6.35	3.18	2.8	5°	0.8	1.7	1				●	
 Multi Edge	VCGW 080202T00815ME 080204T00815ME 080208T00815ME	VCGW 080202ME 080204ME 080208ME	T00815	4.76	2.38	2.3	7°	0.2 0.4 0.8	2.0 2.0 1.7	2			● ● ●	● ● ●	
 Small Edge/Tough	VCGW 080202S01035MET 080204S01035MET 080208S01035MET	- - -	S01035	4.76	2.38	2.3	7°	0.2 0.4 0.8	2.0 2.0 1.7	2			● ● ●	● ● ●	
 Small Edge	VCGW 080202T00815SE 080204T00815SE	VCGW 080202SE 080204SE	T00815	4.76	2.38	2.3	7°	0.2 0.4	2.4 2.0	1			● ●	●	
 Small Edge/Tough	VCGW 080208S01035SET	VCGW 080208SE-T	S01035	4.76	2.38	2.3	7°	0.8	1.8	1				●	
 Small Edge	WBGW 060102T00815R/L-SE 060104T00815R/L-SE	WBGW 060102R/L-SE 060104R/L-SE	T00815	3.97	1.59	2.3	5°	0.2 0.4	1.9 1.9	1			L L	L L	
	WBGW 080202T00815R/L-SE 080204T00815R/L-SE	WBGW 080202R/L-SE 080204R/L-SE	T00815	4.76	2.38			0.2 0.4	2.3 2.3				L L	L L	
 Small Edge/Tough	WBGW 060102S01035R/LSET 060104S01035R/LSET	- WBGW 060104R/L-SE-T	S01035	3.97	1.59	2.3	5°	0.2 0.4	1.9 1.9	1			L L	L L	
	WBGW 080202S01035R/LSET 080204S01035R/LSET	- WBGW 080204R/L-SE-T	S01035	4.76	2.38			0.2 0.4	2.3 2.3				L L	L L	
 CBN surface type	TBGN 060102T00815 060104T00815 060108T00815	TBGN 060102 060104 060108	T00815	3.97	1.59	-	5°	0.2 0.4 0.8	-	3			● ● ●		

●:Std. Stock (1 pc boxes) L:L-hand Only