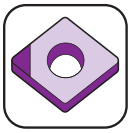
C



Identification system (Turning insert / CBN)

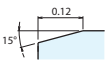
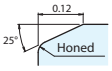
C	N	G	A	12	04	04	S01225	ME

Turning Indexable Inserts Identification System" See B2

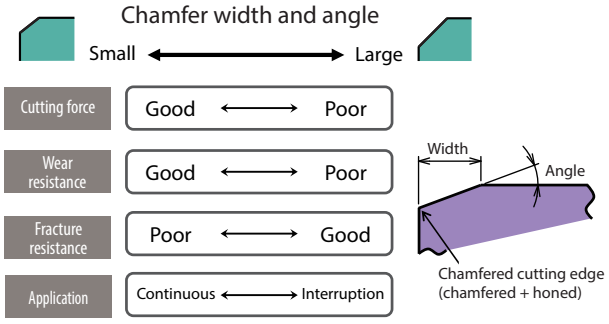
Insert type	Description	Edge preperation	Manufacture's option	Edge length	Number of edges	Re-grinding
Negative	CNGA120404MEF	F	MEF	Short (Small edge)	2	Not recommended
	CNGA120404ME4	S01225	ME4		4 (Multi edge double-sided)	
	CNGA120404S01225ME		ME		2	
	CNGA120404S00545MEP	S00545	MEP		2	
	CNGA120404S01225SE	S01225	SE		1	
	CNMN120404S02020	S02020	Without indication (Only KBN900)	Long	Multi edge	Possible
Positive	CCMW09T304MEF	F	MEF	Short (Small edge)	2	Not recommended
	CCMW09T304T00815ME	T00815	ME		2	
	CCMW09T304S01225MES	S01225	MES		2	
	CCMW09T304T00815SE	T00815	SE		1	

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

Edge preparation identification system

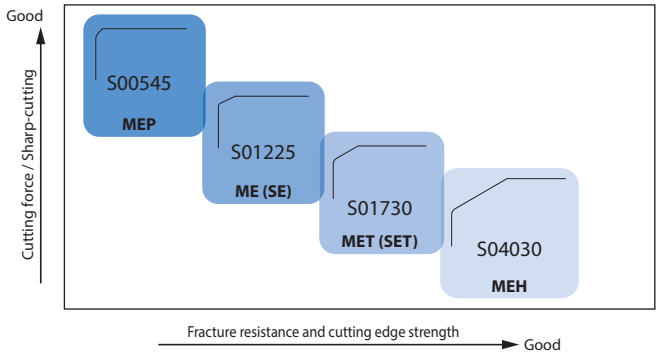
Edge preperation				
Symbol	Cutting edge spec.	Example		Shape
F	Sharp edge	F	Sharp edge	
E	Honed cutting edge	E008	R0.08 mm honed cutting edge	
T	Chamfered cutting edge	T01215	0.12 mm x 15° chamfered cutting edge	
S	Chamfered and honed cutting edge	S01225	0.12 mm x 25° chamfered and honed cutting edge	

Features of chamfer width and angle



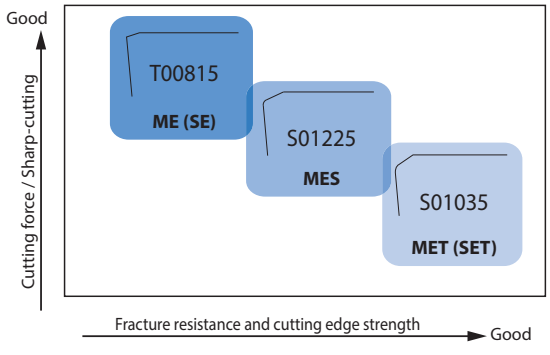
Standard cutting edge preperation

Negative type (machining of hard materials)



Manufacture's option	Edge preperation		Application and features
MEP	S00545	0.05 mm × 45°+ Honed cutting edge	High speed, continuous cut. Excellent crater wear resistance.
ME	S01225	0.12 mm × 25°+ Honed cutting edge	General purpose.
MET	S01730	0.17 mm × 30°+ Honed cutting edge	Superior fracture resistance.
MEH	S04030	0.40 mm × 30°+ Honed cutting edge	Interrupted high feed machining. Prevention of flaking.

Positive type (machining of hard materials)

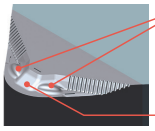
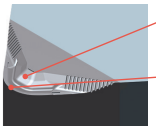
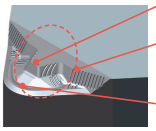


Manufacture's option	Edge preperation		Application and features
ME	T00815	0.08 mm × 15°	Chamfered type. Sharp-cutting oriented, less burring.
MES	S01225	0.12 mm × 25°+ Honed cutting edge	General purpose.
MET	S01035	0.10 mm × 35°+ Honed cutting edge	Interrupted machining. Stable machining oriented.

CBN inserts for machining hardened material

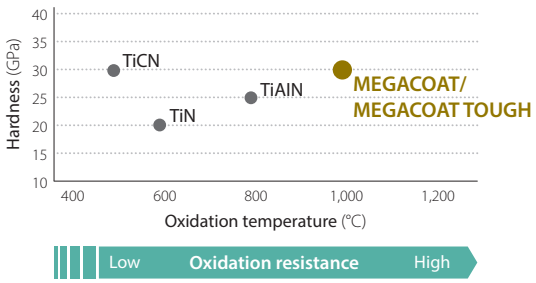
H chipbreaker series

Unique molded chipbreaker provides excellent chip control when machining hardened material. 3 Chipbreaker styles for a wide range of machining applications.

Chipbreaker	Application	Recommended cutting range
HH (1st Recommendation)  Twin Dots: Breaks chips into small pieces. Wide Bump: Provides stable chip curls	Hardened steel finishing 55HRC or more	Small D.O.C. ap = 0.1 ~ 0.3 mm
HL  Wide Bump; Rake Surface: Stable chip control for softer interior of hard materials	Hardened steel finishing 55HRC or less	
HD  Wide Bump; Multi-step Structure: Good for a wide range of conditions; Rake Surface: Stable chip control for softer interior of hard materials	Removing carburized layer From carburized layer to unhardened layer	Large D.O.C. ap = 0.3 ~ 0.7 mm

MEGACOAT CBN

Properties of PVD coating



Advantages of MEGACOAT

Long tool life and stable machining due to superior heat-resistance and hardness.

Stability improvement through prevention of crater wear (oxidation, diffusional wear).

High thermal stability and surface smoothness provide excellent surface finish.

New Coated CBN for Machining Hardened Material

KBN020

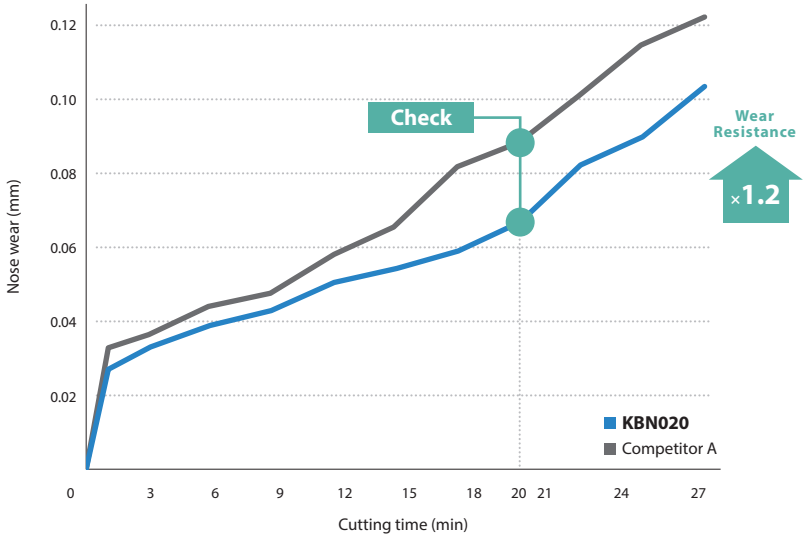
Long tool life and stable machining results with wear resistance and fracture resistance.
Supports a wide range of applications and reduces the cost of machining hardened materials.

1 Combination of New coating technology and high content CBN provides exceptional wear resistance and fracture resistance

Wear Resistance

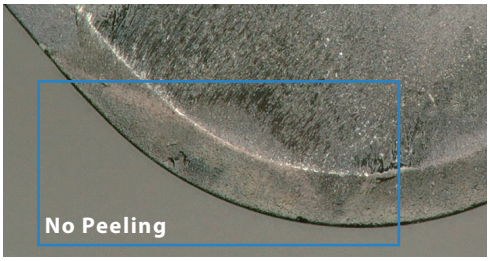
New coating "MEGACOAT TOUGH" suppresses layer peeling.
Excellent wear resistance

Wear Resistance Comparison (In-house evaluation)

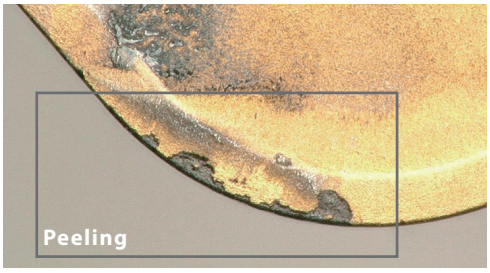


Cutting conditions: Vc = 150 m/min, ap = 0.2 mm, f = 0.1 mm/rev, Wet
Workpiece material: SCM415Ⓗ 60HRC

KBN020



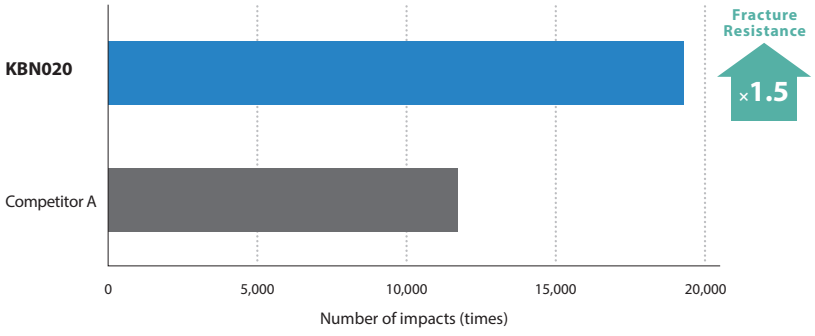
Competitor A



Fracture Resistance

High content CBN and high purity TiN binder improves strength of CBN.
Excellent fracture resistance

Continuous to Interrupted Machining Comparison (In-house evaluation)



Cutting conditions: Vc = 150 m/min, ap = 0.2 mm, f = 0.2 mm/rev, Dry
Workpiece material: SCM415Ⓗ 60HRC

2 Newly Developed Coating "MEGACOAT TOUGH"

Features

An adhesion layer is laminated between
the high wear resistance layer and the CBN.
Reduces layer peeling to achieve long tool life and stable machining.

MEGACOAT TOUGH | CBN |

High Wear Resistance Layer with TiAlN + Oxidation Resistance Components.
Suppresses oxidation/diffusional wear

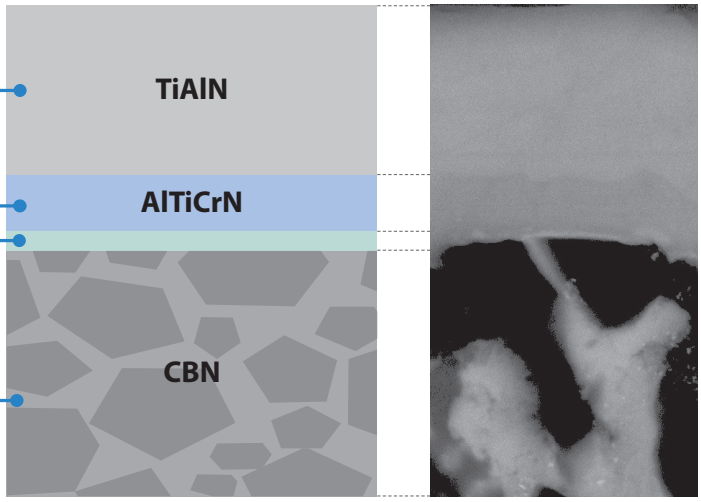
Check New Technology

Interlayer for stress relief

High adhesion layer

Two layers dedicated to CBN.
Improved adhesion between CBN and high wear resistant layer.
Suppressed layer peeling.

High content CBN with high purity TiN binder
Improved CBN strength



Layer image

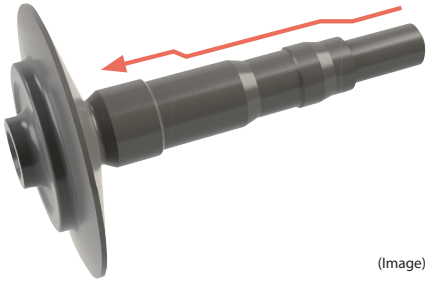
Solution for Automotive Parts

CVT Shaft

Workpiece
SCr420H

Insert
DNGA150404S01225ME

Applications
External finishing



(Image)

Sun Gear

Workpiece
S45C (Carburizing and quenching)

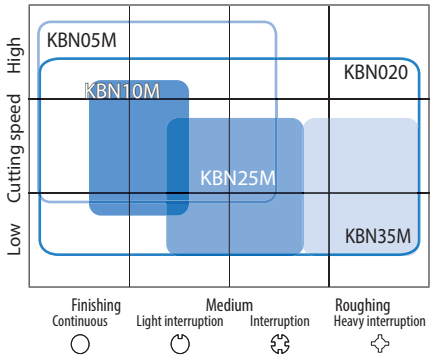
Insert
CCMW09T308S01035MET

Applications
Boring finishing for spline part (Interruption)

(Image)

Application map

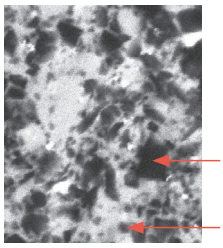
Hard materials



Hybrid grain structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN
CBN that possess High hardness, toughness and thermal resistance characteristics

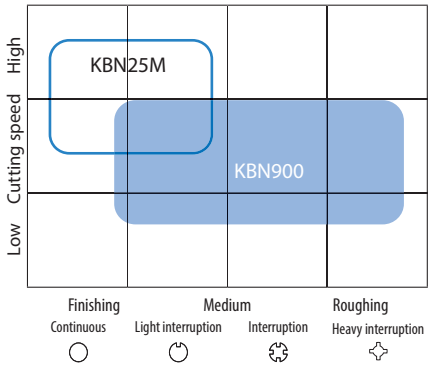
CBN structure



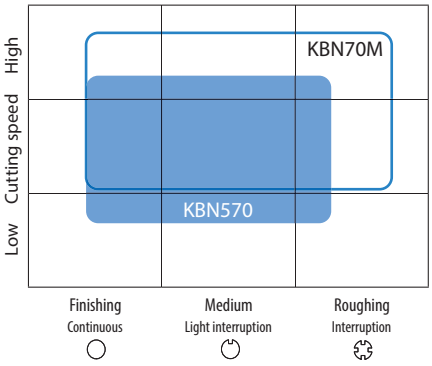
Heat diffusion is promoted by coarse grain CBN
High thermal conductivity

KBN020 : 1st recommended grade for a wide range of application from continuous (high speed finishing) to interrupted machining.
KBN05M : Applicable for continuous (high speed finishing) to interrupted machining. With chipbreaker Inserts are available.
KBN25M : High stability for general machining.
KBN35M : Honeycomb structure CBN (Superior fracture resistance in heavy interrupted machining).

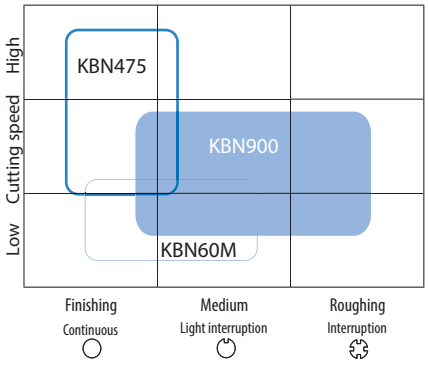
Roll materials (Chilled cast iron)



Sintered steel



Cast iron



Recommended cutting conditions

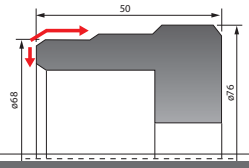
Workpiece material	Hardness	Applications		Recommended insert grade	Cutting conditions		
					Vc: (m/min)	ap: (mm)	f: (mm/rev)
Hardened steel	Over 55HRC	General finishing	Continuous ~ Interruption	KBN020	80 - **150** - 200	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.45
		HH chipbreaker for hardened steel finishing	Continuous ~ Interruption	KBN05M	100 - **150** - 200	0.1 - **0.2** - 0.3	0.1 - **0.15** - 0.25
		High efficient stable machining	Light interruption ~ Interruption	KBN020	80 - **150** - 200	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.45
		Interruption (Small ap)	Interruption ~ Heavy interruption	KBN020	80 - **130** - 180	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.4
		Heavy machining	Continuous ~ Interruption	KBN900	70 - **90** - 110	0.5 - **1.0** - 2.0	0.05 - **0.1** - 0.2
	Under 55HRC	HL chipbreaker for hardened steel finishing	Continuous ~ Interruption	KBN05M	100 - **150** - 200	0.1 - **0.2** - 0.3	0.1 - **0.15** - 0.25
		Finishing	Continuous	*PT600M	60 - **80** - 120	0.2 - **0.5** - 0.7	0.05 - **0.1** - 0.15
	Removing the carburized layer	HD chipbreaker	Continuous ~ Interruption	KBN05M	100 - **150** - 200	0.3 - **0.5** - 0.7	0.1 - **0.15** - 0.25
Gray cast iron	Under 250HB	Finishing	Continuous ~ Light interruption	KBN475	400 - **800** - 1,200	0.05 - **0.2** - 0.5	0.1 - **0.2** - 0.3
		Finishing	Continuous ~ Light interruption	KBN60M	300 - **500** - 700	0.05 - **0.2** - 0.5	0.1 - **0.2** - 0.3
		High efficient finishing	Continuous~Light interruption	KBN900	500 - **900** - 1,200	0.1 - **0.5** - 1.0	0.05 - **0.1** - 0.2
		Heavy machining	Continuous ~ interruption	KBN900	500 - **700** - 900	0.5 - **1.5** - 3.0	0.1 - **0.3** - 0.5
Roll materials (Chilled cast iron)	Over 55HRC	Finishing	Continuous ~ interruption	KBN25M	80 - **120** - 160	0.05 - **0.3** - 0.5	0.05 - **0.08** - 0.1
		Heavy machining	Continuous ~ interruption	KBN900	70 - **90** - 110	0.3 - **0.7** - 1.0	0.05 - **0.1** - 0.15
Sintered steel	-	Finishing	Continuous ~ Light interruption	KBN570	50 - **150** - 250	0.05 - **0.15** - 0.25	0.03 - **0.1** - 0.2
	-	Finishing	Continuous ~ Interruption	KBN70M	100 - **200** - 250	0.05 - **0.2** - 0.3	0.05 - **0.15** - 0.25

*PT600M: MEGACOAT on Al_2O_3+TiC ceramic

Case studies

SCr420H (58HRC)

- Gear
- External , facing & chamfering
- Vc = 130 m/min
- ap = 0.6 mm
- f = 0.12 mm/rev
- Wet
- CNGA120408S01225ME (KBN05M)



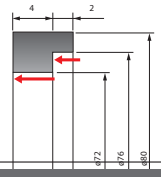
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge

- KBN05M achieved 1.5 times longer tool life than competitor C.
- Its longer tool life contributes to cost-cutting.

Evaluation by the user

SCM415 (55HRC)

- Stator
- Boring
- Vc = 170 m/min
- ap = 0.4 mm
- f = 0.1 mm/rev
- Wet
- CNGA120408S01225ME (KBN05M)



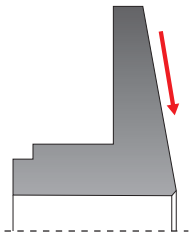
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge

- KBN05M achieved twice longer tool life than competitor D.
- Its longer tool life contributes to cost-cutting.

Evaluation by the user

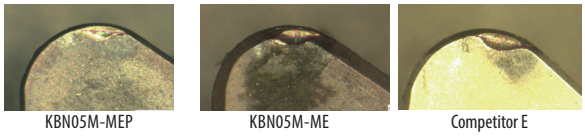
SCr420H (58HRC)

- Pulley
- Facing (Continuous)
- Vc = 120 m/min
- ap = 0.15 ~ 0.2 mm
- f = 0.24 mm/rev
- Wet
- DNGA120408S00545MEP (KBN05M)



KBN05M-MEP (Edge preperation: 0.05 × 45˚)	150 pcs/edge
KBN05M-ME (Edge preperation: 0.12 × 25˚)	100 pcs/edge
Competitor E	100 pcs/edge

- Tool life of KBN05M-ME type (Edge prep.: 0.12 × 25° chamfered + R honed) is same as comp. E's.
- KBN05M-MEP (Edge prep.: 0.05 × 45° chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear.

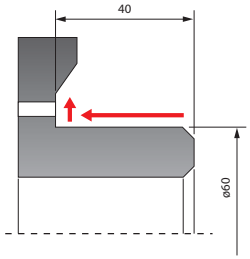


KBN05M-MEP | KBN05M-ME | Competitor E

Evaluation by the user

SCr20 (61~65HRC)

- Gear
- External & facing (Interrupted)
- Vc = 120 m/min
- ap = 0.15 mm
- f = 0.1~0.15 mm/rev (External)
- Wet
- CNGA120408S04030MEH (KBN05M)



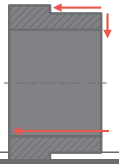
KBN05M-MEH (Edge preperation: 0.40 × 30˚)	150 pcs/edge
Competitor F	100 pcs/edge

- Compared to competitor F, KBN05M-MEH type (Edge prep.: 0.40 × 30° chamfered + R honed) achieved 1.5 times longer tool life.
- No chipping in interrupted machining, and improved productivity. Competitor F's cutting edge got many chipping.
- Feed rate could be increased from 0.15 to 0.25 mm/rev in facing.
- Achieved cycle time and cost reduction.

Evaluation by the user

SCM440 Hardened Steel (55 ~ 62HRC)

- Pinion
- Vc = 130 m/min
- ap = 0.05 mm
- f = 0.08 mm/rev
- Dry
- CNGM120408ME-HH (KBN05M)



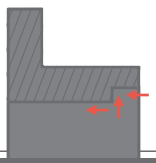
KBN05M HH Chipbreaker	70 pcs/edge
Competitor G	30 pcs/edge

The HH chipbreaker maintained 2.3 times longer tool life than Competitor F. The molded chipbreaker provided stable chip control.

Evaluation by the user

SCr420H (59HRC)

- Clutch
- Vc = 100 m/min
- ap = 0.15 mm
- f = 0.10 mm/rev
- Wet
- WNGA080408S01225ME (KBN020)



KBN020	650 pcs/edge
Competitor H	400 pcs/edge

KBN020 can be stable machining and long tool life.

Evaluation by the user

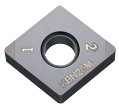
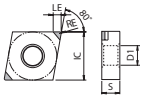
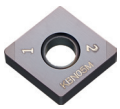
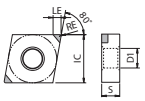
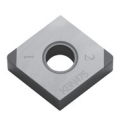
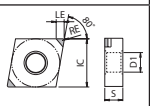
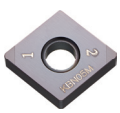
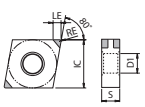
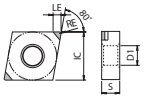
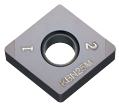
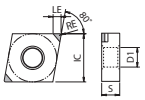
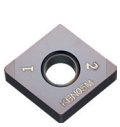
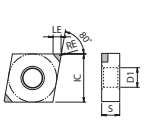
80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)													K
Gray cast iron (without scale)						◕		●					
Nodular cast iron (with scale)													
Hard materials (Roughing)					✖								H
Hard materials (Finishing)	●	●	○	◕					○	◔			
Hard materials (Chip control)													
Sintered steel							✖				◕		-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
											PVD						-			
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 With Wiper Edge	CNGA	120404S01215MEW	S01225	2	12.7	4.76	5.16	0.4	2.6	●	●		●					●	●	D8~D10 F116 F125 F126
			120408S01215MEW						0.8	2.5	●	●	○	●	●			●	●	
			120412S01215MEW						1.2	2.5	●	●	○	●						
	 Finishing	CNGA	120404S00545MEP	S00545	2	12.7	4.76	5.16	0.4	2.6		●									
			120408S00545MEP						0.8	2.6		●									
			120412S00545MEP						1.2	2.5		●									
			120416S00545MEP						1.6	3.4		●									
			120420S00545MEP						2	3.4		●									
			120424S00545MEP						2.4	3.3		●									
	 Sharp edge	CNGA	120404MEF	F	2	12.7	4.76	5.16	0.4	2.6								●		●	
			120408MEF						0.8	2.6								●		●	
			120412MEF						1.2	2.5								●			
	 Double-sided	CNGA	120404ME4	S01225	4	12.7	4.76	5.16	0.4	2.6		●									
			120408ME4						0.8	2.6		●									
			120412ME4						1.2	2.5		●									
		CNGA	120404T01215ME	T01215	2	12.7	4.76	5.16	0.4	2.6							●	●			
			120408T01215ME						0.8	2.6							●	●			
			120412T01215ME						1.2	2.5							●	●			
		CNGA	120402S01225ME	S01225	2	12.7	4.76	5.16	0.2	2.6	●	●		●		●				●	
			120404S01225ME						0.4	2.6	●	●	○	●	●	●		●	●	●	
			120408S01225ME						0.8	2.6	●	●	○	●	●	●		●	●	●	
			120412S01225ME						1.2	2.5	●	●	○	●	●	●		●		●	
			120416S01225ME						1.6	3.4	●	●									
			120420S01225ME						2	3.4	●	●									
			120424S01225ME						2.4	3.3		●									
	 Tough	CNGA	120404S01730MET	S01730	2	12.7	4.76	5.16	0.4	2.6	●	●		●	●					●	
			120408S01730MET						0.8	2.6	●	●		●	●					●	
			120412S01730MET						1.2	2.5	●	●		●	●						
			120416S01730MET						1.6	3.4	●	●									
			120420S01730MET						2	3.4		●									
			120424S01730MET						2.4	3.3		●									
	 Interruption	CNGA	120404S04030MEH	S04030	2	12.7	4.76	5.16	0.4	2.6		●									
			120408S04030MEH						0.8	2.6	●	●									
			120412S04030MEH						1.2	2.5	●	●									
			120416S04030MEH						1.6	3.4		●									
			120420S04030MEH						2	3.4		●									
			120424S04030MEH						2.4	3.3		●									

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

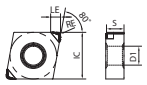
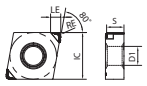
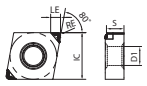
80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)		K
Gray cast iron (without scale)		
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)	●	
Sintered steel		-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	CBN KBN05M	PVD	Applicable toolholder
	 Hardened steel Finishing (55HRC or more)	CNGM 120404ME-HH	E	2	12.7	4.76	5.16	0.4	2.6	●		D8~D10 F116 F125 F126
		CNGM 120408ME-HH						0.8	2.6	●		
		CNGM 120412ME-HH						1.2	2.5	●		
	 Hardened steel Finishing (55HRC or less)	CNGM 120404ME-HL	E	2	12.7	4.76	5.16	0.4	2.6	●		
		CNGM 120408ME-HL						0.8	2.6	●		
		CNGM 120412ME-HL						1.2	2.5	●		
	 Removing the Carburized Layer	CNGM 120404ME-HD	S01235	2	12.7	4.76	5.16	0.4	2.6	●		
		CNGM 120408ME-HD						0.8	2.6	●		
		CNGM 120412ME-HD						1.2	2.5	●		

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

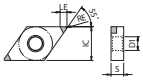
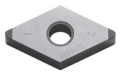
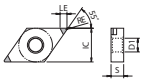
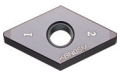
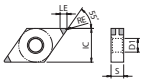
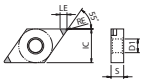
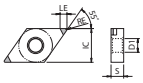
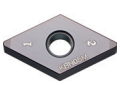
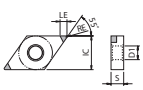
55° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)														K
Gray cast iron (without scale)						◕		●						
Nodular cast iron (with scale)														
Hard materials (Roughing)					✖									H
Hard materials (Finishing)	●	●	○	◕						○	◔			
Hard materials (Chip control)														
Sintered steel							✖						◕	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
											PVD						-			
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 Finishing	DNGA	150404S00545MEP 150408S00545MEP 150412S00545MEP 150416S00545MEP 150420S00545MEP 150424S00545MEP	S00545	2	12.7	4.76	5.16	0.4 0.8 1.2 1.6 2 2.4	2.6 2.2 1.9 3.8 3.5 3.1		●										D13~D17 F118, F130 F132~F134
	 Sharp edge	DNGA	150404MEF 150408MEF 150412MEF	F	2	12.7	4.76	5.16	0.4 0.8 1.2	2.6 2.2 1.9								●			●	
	 Double-sided	DNGA	150404ME4 150408ME4 150412ME4	S01225	4	12.7	4.76	5.16	0.4 0.8 1.2	2.6 2.2 1.9		●										
		DNGA	150404T01215ME 150408T01215ME 150412T01215ME	T01215	2	12.7	4.76	5.16	0.4 0.8 1.2	2.6 2.2 1.9						●		●				
		DNGA	150604T01215ME	T01215	2	12.7	6.35	5.16	0.4	2.6						●						D13~D17 F118
		DNGA	150401S01225ME 150402S01225ME 150404S01225ME 150408S01225ME 150412S01225ME 150416S01225ME 150420S01225ME 150424S01225ME	S01225	2	12.7	4.76	5.16	0.1 0.2 0.4 0.8 1.2 1.6 2 2.4	2.8 2.7 2.6 2.2 1.9 3.8 3.5 3.1	●	●		●									D13~D17 F118, F130 F132~F134
		DNGA	150604S01225ME 150608S01225ME 150612S01225ME	S01225	2	12.7	6.35	5.16	0.4 0.8 1.2	2.6 2.2 1.9	●	●		●	●	●						D13~D17 F118
	 Tough	DNGA	150404S01730MET 150408S01730MET 150412S01730MET 150416S01730MET 150420S01730MET 150424S01730MET	S01730	2	12.7	4.76	5.16	0.4 0.8 1.2 1.6 2 2.4	2.6 2.2 1.9 3.8 3.5 3.1	●	●		●	●					●		D13~D17 F118, F130 F132~F134
		DNGA	150604S01730MET 150608S01730MET 150612S01730MET	S01730	2	12.7	6.35	5.16	0.4 0.8 1.2	2.6 1.9 1.9	●	●	○	●	●					●		D13~D17 F118
	 Interruption	DNGA	150404S04030MEH 150408S04030MEH 150412S04030MEH 150416S04030MEH 150420S04030MEH 150424S04030MEH	S04030	2	12.7	4.76	5.16	0.4 0.8 1.2 1.6 2 2.4	2.6 2.2 1.9 3.8 3.5 3.1	●	●										D13~D17 F118, F130 F132~F134

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

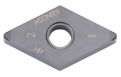
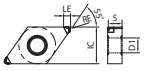
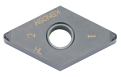
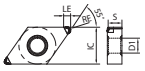
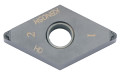
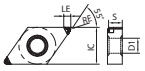
55° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)		K
Gray cast iron (without scale)		
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)	●	
Sintered steel		-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	CBN KBN05M	PVD	Applicable toolholder
	 Hardened steel Finishing (55HRC or more)	DNGM 150404ME-HH	E	2	12.7	4.76	5.16	0.4	2.6	●		D13~D17 F118, F130 F132~F134
		DNGM 150408ME-HH						0.8	2.2	●		
		DNGM 150412ME-HH						1.2	1.9	●		
	 Hardened steel Finishing (55HRC or less)	DNGM 150404ME-HL	E	2	12.7	4.76	5.16	0.4	2.6	●		
		DNGM 150408ME-HL						0.8	2.2	●		
		DNGM 150412ME-HL						1.2	1.9	●		
	 Removing the Carburized Layer	DNGM 150404ME-HD	S01235	2	12.7	4.76	5.16	0.4	2.6	●		
		DNGM 150408ME-HD						0.8	2.2	●		
		DNGM 150412ME-HD						1.2	1.9	●		

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

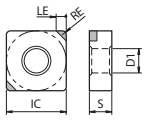
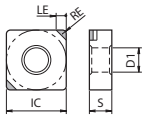
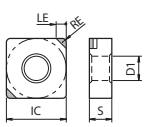
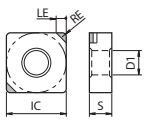
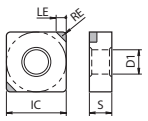
90° Square

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

	KBN020	KBN05M	KBN25M	KBN35M	KBN475	KBN525	
Gray cast iron (with scale)							K
Gray cast iron (without scale)					●		
Nodular cast iron (with scale)							
Hard materials (Roughing)				✖			H
Hard materials (Finishing)	●	●	◕			◔	
Hard materials (Chip control)							
Sintered steel							-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	CBN PVD KBN020	KBN05M	KBN25M	KBN35M	CBN - KBN475	KBN525	Applicable toolholder
	 Finishing	SNGA	120408S00545MEP 120412S00545MEP	S00545	2	12.7	4.76	5.16	0.8 1.2	1.8 2.2		● ●					D19~D21 F136
	 Sharp edge	SNGA	120408MEF 120412MEF	F	2	12.7	4.76	5.16	0.8 1.2	1.8 2.2					● ●		
		SNGA	120408T01215ME 120412T01215ME	T01215	2	12.7	4.76	5.16	0.8 1.2	1.8					● ●		
		SNGA	120404S01225ME 120408S01225ME 120412S01225ME	S01225	2	12.7	4.76	5.16	0.4 0.8 1.2	1.8	● ●	● ●	● ●		● ● ●	●	
	 Tough	SNGA	120404S01730MET 120408S01730MET 120412S01730MET	S01730	2	12.7	4.76	5.16	0.4 0.8 1.2	1.8 1.8 2.2	● ●	● ●	● ●	● ●			
	 Interruption	SNGA	120408S04030MEH 120412S04030MEH	S04030	2	12.7	4.76	5.16	0.8 1.2	1.8 2.2		● ●					

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

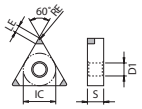
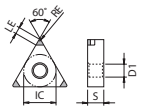
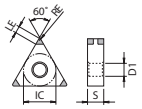
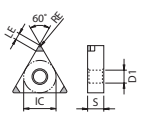
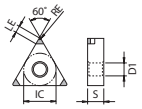
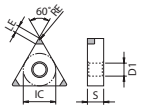
60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)													K
Gray cast iron (without scale)						◕		●					
Nodular cast iron (with scale)													
Hard materials (Roughing)					✖								H
Hard materials (Finishing)	●	●	○	◕					○	◔			
Hard materials (Chip control)													
Sintered steel							✖				◕		-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
											PVD						-			
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 Finishing	TNGA	160404S00545MEP 160408S00545MEP 160412S00545MEP	S00545	3	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1		● ● ●									D22~D25 D27, D28 F120 F137 F138
	 Sharp edge	TNGA	160404MEF 160408MEF 160412MEF	F	3	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1								● ● ●		● ●	
	 Double-sided	TNGA	160404ME6 160408ME6 160412ME6	S01225	6	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1		● ● ●									
		TNGA	160404T01215ME 160408T01215ME 160412T01215ME	T01215	3	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1						● ● ●	●	● ● ●			
		TNGA	160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME 160412S01225ME	S01225	3	9.525	4.76	3.81	0.1 0.2 0.4 0.8 1.2	2.9 2.8 2.7 2.4 2.1		● ● ● ● ●	● ● ○ ○ ○	● ● ● ● ●	● ● ● ●	● ● ●		● ● ●	● ● ●	● ● ●	
	 Tough	TNGA	160404S01730MET 160408S01730MET 160412S01730MET	S01730	3	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1		● ● ●		● ● ●	● ● ●				● ● ●	
	 Interruption	TNGA	160404S04030MEH 160408S04030MEH 160412S04030MEH	S04030	3	9.525	4.76	3.81	0.4 0.8 1.2	2.7 2.4 2.1		● ● ●								

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

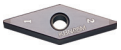
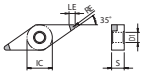
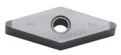
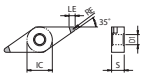
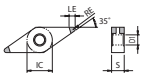
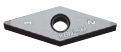
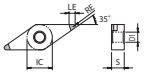
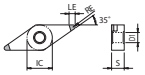
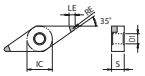
35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
Gray cast iron (with scale)												K
Gray cast iron (without scale)						●		●				
Nodular cast iron (with scale)												
Hard materials (Roughing)					✖							H
Hard materials (Finishing)	●	●	○	●					○	◔		
Hard materials (Chip control)												
Sintered steel							✖				●	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	CBN PVD KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN - KBN475	KBN510	KBN525	KBN570	Applicable toolholder
	 Finishing	VNGA	160404S00545MEP 160408S00545MEP	S00545	2	9.525	4.76	3.81	0.4 0.8	2 1.8		● ●										D30~D39
	 Sharp edge	VNGA	160404MEF 160408MEF	F	2	9.525	4.76	3.81	0.4 0.8	2 1.8								● ●			●	
	 Double-sided	VNGA	160404ME4 160408ME4	S01225	4	9.525	4.76	3.81	0.4 0.8	2 1.8		● ●										
		VNGA	160404T01215ME 160408T01215ME	T01215	2	9.525	4.76	3.81	0.4 0.8	2 1.8							●	● ●				
		VNGA	160401S01225ME 160402S01225ME 160404S01225ME 160408S01225ME	S01225	2	9.525	4.76	3.81	0.1 0.2 0.4 0.8	2.6 2.3 2 1.8	● ● ● ●	● ● ●	○ ○ ○	● ● ● ●	● ● ● ●	● ●		● ●	● ●	● ●		
	 Tough	VNGA	160404S01730MET 160408S01730MET	S01730	2	9.525	4.76	3.81	0.4 0.8	2 1.8	● ●	● ●		● ●	● ●					● ●		
	 Interruption	VNGA	160404S04030MEH 160408S04030MEH	S04030	2	9.525	4.76	3.81	0.4 0.8	2 1.8		● ●										

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

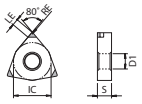
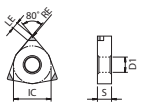
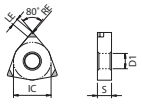
80° Trigon

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)					◕	●		K	
Gray cast iron (without scale)					◕	●			
Nodular cast iron (with scale)					◕	●			
Hard materials (Roughing)				✱				H	
Hard materials (Finishing)	●	●	◕				◔		
Hard materials (Chip control)									
Sintered steel								-	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					CBN						Applicable toolholder
					IC	S	D1	RE	LE	PVD				-		
										KBN020	KBN05M	KBN25M	KBN35M	KBN60M	KBN475	KBN525
	 Sharp edge	WNGA 080404MEF 080408MEF	F	3	12.7	4.76	5.16	0.4 0.8	2 2.6						● ●	
		WNGA 080404T01215ME 080408T01215ME	T01215	3	12.7	4.76	5.16	0.4 0.8	2 2.6						● ●	D43~D46 F140 F142 F143
		WNGA 080404S01225ME 080408S01225ME 080412S01225ME	S01225	3	12.7	4.76	5.16	0.4 0.8 1.2	2 2.6 2.5	● ● 	● ● ●	● ● ●	● ● 	● ● 	● ● ●	● ● ●
	 Tough	WNGA 080404S01730MET 080408S01730MET 080412S01730MET	S01730	3	12.7	4.76	5.16	0.4 0.8 1.2	2 2.6 2.5	● ●	 	● ●	● ● ●	 	 	

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

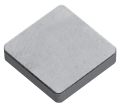
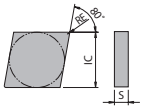
80° Rhombic / Solid

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	✖	K
Gray cast iron (without scale)	✖	
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)		
Sintered steel		-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	CBN KBN900	PVD	Applicable toolholder
		CNMN 090308S02020 090312S02020	S02020	4	9.525	3.18	0.8 1.2	● ●		D60
		CNMN 120412S02020 120416S02020	S02020	4	12.7	4.76	1.2 1.6	● ●		D49

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

Round / Solid

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	✖	K
Gray cast iron (without scale)	✖	
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)		
Sintered steel		-

Insert		Description	Edge preparation type	Dimension (mm) IC	Dimension (mm) S	CBN	PVD	KBN900	Applicable toolholder
		RNMN 090300S02020	S02020	9.525	3.18	●			D61
		RNMN 120300S02020	S02020	12.7	3.18	●			D61
		RNMN 120400S02020	S02020	12.7	4.76	●			D58, D61

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

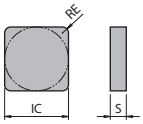
90° Square / Solid

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	✖	K
Gray cast iron (without scale)	✖	
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)		
Sintered steel		-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	CBN KBN900	PVD	Applicable toolholder
		SNMN 090308S02020	S02020	8	9.525	3.18	0.8	●		D63, D64
		SNMN 090312S02020					1.2	●		
		SNMN 120308S02020	S02020	8	12.7	3.18	0.8	●		D63, D64
		SNMN 120312S02020					1.2	●		
		SNMN 120412S02020	S02020	8	12.7	4.76	1.2	●		D52~D54 D63, D64
		SNMN 120416S02020					1.6	●		
		SNMN 120420S02020					2	●		

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

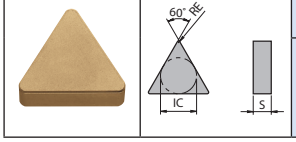
60° Triangle / Solid

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	✖	K
Gray cast iron (without scale)	✖	
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)		
Sintered steel		-

Insert	Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	CBN	PVD KBN900	Applicable toolholder
	TNMN 110308S02020	S02020	6	6.35	3.18	0.8	●		D66, F146
	TNMN 160408S02020 160412S02020	S02020	6	9.525	4.76	0.8 1.2	● ●		D56

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

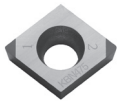
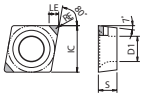
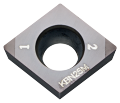
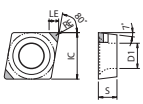
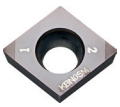
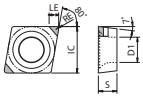
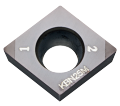
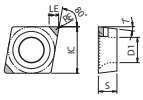
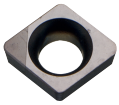
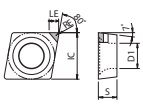
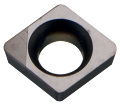
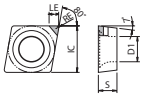
80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)													K
Gray cast iron (without scale)						●		●					
Nodular cast iron (with scale)													
Hard materials (Roughing)					✖								H
Hard materials (Finishing)	●	●	○	◕					○	◔			
Hard materials (Chip control)													
Sintered steel							✖				◕		-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
											PVD						-			
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 Sharp edge	CCMW	09T304MEF 09T308MEF	F	2	9.525	3.97	4.4	0.4 0.8	1.9 1.8								● ●			● ●	E26~E28 E54 F60~F62 F122
		CCMW	060202T00815ME 060204T00815ME 060208T00815ME	T00815	2	6.35	2.38	2.8	0.2 0.4 0.8	2 1.9 1.8	● ● ●	● ● ●	○ ○ ○	● ● ●	● ● ●	 ● ●	 	 ● ●	● ● ●	 ● ●	E26, E28, E54 F31, F32 F60~F62
		CCMW	09T302T00815ME 09T304T00815ME 09T308T00815ME	T00815	2	9.525	3.97	4.4	0.2 0.4 0.8	2 1.9 1.8	● ● ●	● ● ●	 ○ ○	● ● ●	● ● ●	 ● ●	 	 ● ●	 ● ●	● ● ●	E26~E28, E54 F60~F62 F122
	 General purpose	CCMW	060204S01225MES 060208S01225MES	S01225	2	6.35	2.38	2.8	0.4 0.8	1.9 1.8	● ●	● ●									E26, E28, E54 F31, F32 F60~F62
		CCMW	09T304S01225MES 09T308S01225MES	S01225	2	9.525	3.97	4.4	0.4 0.8	1.9 1.8	● ●	● ●						● ●			E26~E28, E54 F60~F62 F122
	 Tough	CCMW	09T304S01035MET 09T308S01035MET	S01035	2	9.525	3.97	4.4	0.4 0.8	1.9 1.8	● ●	● ●	○ ○	● ●	● ●					● 	E26~E28 E54 F60~F62 F122
		CCMW	030102T00815SE 030104T00815SE	T00815	1	3.5	1.4	1.9	0.2 0.4	1.4			○ ○	● ●				● ●	● ●		F31 F32 F60 F62
		CCMW	040102T00815SE 040104T00815SE	T00815	1	4.3	1.8	2.3	0.2 0.4	1.4			○ ○	● ●				● ●	● ●		
		CCMW	060202T00815SE 060204T00815SE	T00815	1	6.35	2.38	2.8	0.2 0.4	2 1.9				 ●				● ●	● ●		E26, E28, E54 F31, F32 F60~F62
		CCMW	09T302T00815SE 09T304T00815SE	T00815	1	9.525	3.97	4.4	0.2 0.4	2 1.9								● ●	● ●		E26~E28, E54 F60~F62 F122
	 Tough	CCMW	030102S01035SET 030104S01035SET	S01035	1	3.5	1.4	1.9	0.2 0.4	1.4			○ ○	● ●					 ●		F31 F32 F60 F62
		CCMW	040102S01035SET 040104S01035SET	S01035	1	4.3	1.8	2.3	0.2 0.4	1.4			○ ○	● ●					 ●		
		CCMW	060204S01035SET	S01035	1	6.35	2.38	2.8	0.4	1.9									●		E26, E28, E54 F31, F32 F60~F62
		CCMW	09T304S01035SET	S01035	1	9.525	3.97	4.4	0.4	1.9									●		E26~E28, E54 F60~F62 F122

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

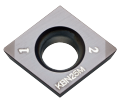
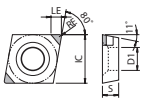
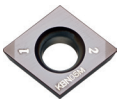
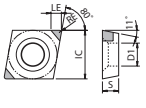
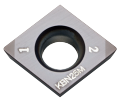
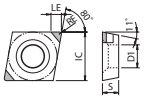
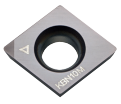
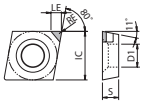
80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	K
Gray cast iron (without scale)	
Nodular cast iron (with scale)	
Hard materials (Roughing)	H
Hard materials (Finishing)	
Hard materials (Chip control)	
Sintered steel	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
						IC	S	D1	RE	LE	PVD						-			
											KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN475	KBN510	KBN525	
		CPGB	080204T00815ME	T00815	2	7.94	2.38	3.5	0.4	1.9	●	●		●			●		●	F64 F65
		CPGB	090302T00815ME 090304T00815ME 090308T00815ME	T00815	2	9.525	3.18	4.5	0.2 0.4 0.8	1.9 1.9 2.5	● ● ●	● ● ●		● ● ●		● ●	● ● ●		● ●	
	 General purpose	CPGB	090304S01225MES 090308S01225MES	S01225	2	9.525	3.18	4.5	0.4 0.8	1.9 2.5	● ●	● ●								
	 Tough	CPGB	080204S01035MET 080208S01035MET	S01035	2	7.94	2.38	3.5	0.4 0.8	1.9 2.2	● ●			● ●					●	
		CPGB	090304S01035MET 090308S01035MET	S01035	2	9.525	3.18	4.5	0.4 0.8	1.9 2.5	● ●	● ●	○	● ●	● ●				●	
		CPGB	080202T00815SE 080204T00815SE	T00815	1	7.94	2.38	3.5	0.2 0.4	1.9								● ●	● ●	
		CPGB	090302T00815SE 090304T00815SE	T00815	1	9.525	3.18	4.5	0.2 0.4	1.9								● ●	● ●	

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

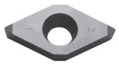
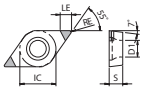
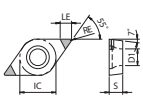
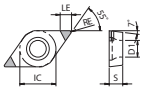
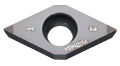
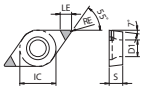
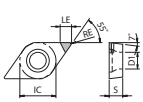
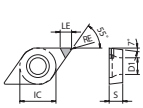
55° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)													K
Gray cast iron (without scale)						●		●					
Nodular cast iron (with scale)													
Hard materials (Roughing)					✖								H
Hard materials (Finishing)	●	●	○	◕						○	◔		
Hard materials (Chip control)													
Sintered steel							✖					◕	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
											PVD							-		
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 Sharp edge	DCMW	11T304MEF 11T308MEF	F	2	9.525	3.97	4.4	0.4 0.8	1.7 1.9								● ●			● ●	E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
		DCMW	070202T00815ME 070204T00815ME 070208T00815ME	T00815	2	6.35	2.38	2.8	0.2 0.4 0.8	1.9 1.7 1.9	● ● ●	● ● ●	○ 	● ● ●	● ● ●	● ● 		● ● 	● ● 	● ● ●	
		DCMW	11T302T00815ME 11T304T00815ME 11T308T00815ME 11T312T00815ME	T00815	2	9.525	3.97	4.4	0.2 0.4 0.8 1.2	1.9 1.7 1.9 1.9	● ● ● ●	● ● ● ●	○ ○ ○ 	● ● ● 	● ● ● 	● ● ● 	 ● ●	 ● ●	● ● ●	● ● ●	E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
	 General purpose	DCMW	11T302S01225MES 11T304S01225MES 11T308S01225MES	S01225	2	9.525	3.97	4.4	0.2 0.4 0.8	1.9 1.7 1.9	● ● ●	● ● ●						● ●			E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
	 Tough	DCMW	070202S01035MET 070204S01035MET 070208S01035MET	S01035	2	6.35	2.38	2.8	0.2 0.4 0.8	1.9 1.7 1.9	● ● ●			● ● ●	● ● 						E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMW	11T302S01035MET 11T304S01035MET 11T308S01035MET 11T312S01035MET	S01035	2	9.525	3.97	4.4	0.2 0.4 0.8 1.2	1.9 1.7 1.9 1.9	● ● ● ●	● ● 	 ○ ○ ○	● ● ● ●	● ● ● ●					● ● ●	E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
		DCMW	070202T00815SE 070204T00815SE	T00815	1	6.35	2.38	2.8	0.2 0.4	1.9 1.7				● ●					● ●	● ●	E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMW	11T302T00815SE 11T304T00815SE	T00815	1	9.525	3.97	4.4	0.2 0.4	1.9 1.7									● ●	● ●	E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
		DCMW	070204S01035SET	S01035	1	6.35	2.38	2.8	0.4	1.7										●	E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
	Tough	DCMW	11T302S01035SET 11T304S01035SET	S01035	1	9.525	3.97	4.4	0.2 0.4	1.9 1.7										● ●	E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

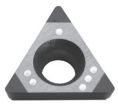
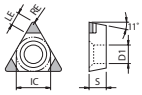
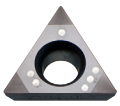
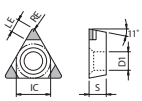
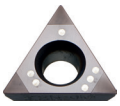
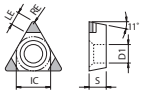
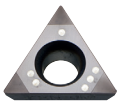
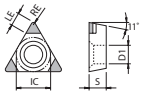
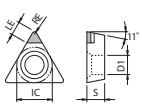
60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	K
Gray cast iron (without scale)	K
Nodular cast iron (with scale)	K
Hard materials (Roughing)	H
Hard materials (Finishing)	H
Hard materials (Chip control)	H
Sintered steel	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN									Applicable toolholder
						IC	S	D1	RE	LE	PVD						-			
											KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN475	KBN510	KBN525	KBN570	
	 Sharp edge	TPGB	110304MEF 110308MEF	F	3	6.35	3.18	3.5	0.4 0.8	2.1 1.8							● ●		● ●	E39 F80~F82 F84, F85
		TPGB	110302T00815ME 110304T00815ME 110308T00815ME	T00815	3	6.35	3.18	3.5	0.2 0.4 0.8	2.3 2.1 1.8	● ● ●	● ● ●	○ ○ ○	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	E39 F80~F82 F84, F85
		TPGB	160304T00815ME 160308T00815ME	T00815	3	9.525	3.18	4.5	0.4 0.8	1.8 1.5		● ●		● ●		● ●	● ●			F80~F82 F84
	 General purpose	TPGB	110304S01225MES 110308S01225MES	S01225	3	6.35	3.18	3.5	0.4 0.8	2.1 1.8	● ●	● ●					● ●			E39 F80~F82 F84, F85
	 Tough	TPGB	110302S01035MET 110304S01035MET 110308S01035MET	S01035	3	6.35	3.18	3.5	0.2 0.4 0.8	2.3 2.1 1.8	● ● ●	● ●	○ ○ ○	● ● ●	● ● ●					E39 F80~F82 F84, F85
		TPGB	160304S01035MET 160308S01035MET	S01035	3	9.525	3.18	4.5	0.4 0.8	1.8 1.5	● ●			● ●					● ●	F80~F82 F84
		TPGB	080202T00815SE 080204T00815SE	T00815	1	4.76	2.38	2.5	0.2 0.4	1.8 1.6			○ ○	● ●				● ●	● ●	E39 F80~F82, F86
		TPGB	090202T00815SE 090204T00815SE	T00815	1	5.56	2.38	3	0.2 0.4	1.8 1.6			○ ○	● ●				● ●	● ●	F33, F34 F80~F82, F86
		TPGB	110302T00815SE 110304T00815SE 110308T00815SE	T00815	1	6.35	3.18	3.5	0.2 0.4 0.8	1.9 1.8 1.5			○ ○					● ●	● ● ●	E39 F80~F82 F84, F85
		TPGB	160302T00815SE 160304T00815SE	T00815	1	9.525	3.18	4.5	0.2 0.4	1.9 1.8								● ●	● ●	F80~F82 F84
	 Tough	TPGB	080202S01035SET 080204S01035SET	S01035	1	4.76	2.38	2.5	0.2 0.4	1.8 1.6				● ●					● ●	E39 F80~F82, F86
		TPGB	090202S01035SET 090204S01035SET	S01035	1	5.56	2.38	3	0.2 0.4	1.8 1.6				● ●					● ●	F33, F34 F80~F82, F86
		TPGB	110304S01035SET 110308S01035SET	S01035	1	6.35	3.18	3.5	0.4 0.8	1.8 1.5									● ●	E39, F80~F82 F84, F85
		TPGB	160304S01035SET	S01035	1	9.525	3.18	4.5	0.4	1.8									●	F80~F82 F84

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

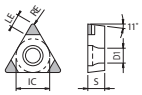
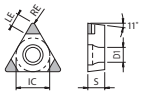
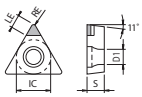
60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)						K
Gray cast iron (without scale)						
Nodular cast iron (with scale)						
Hard materials (Roughing)						H
Hard materials (Finishing)	●	○	◕	◔		
Hard materials (Chip control)						
Sintered steel						-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN			Applicable toolholder
						IC	S	D1	RE	LE	PVD		-	
											KBN020	KBN10M	KBN25M	KBN525	
		TPGW	160404T00815ME 160408T00815ME	T00815	3	9.525	4.76	4.4	0.4 0.8	1.8 1.5		○	●		-
	 Tough	TPGW	160404S01035MET 160408S01035MET	S01035	3	9.525	4.76	4.4	0.4 0.8	1.8 1.5	● ●		● ●		
		TPGW	160404T00815SE	T00815	1	9.525	4.76	4.4	0.4	1.8				●	

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

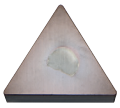
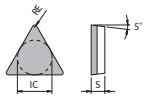
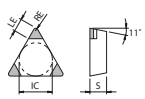
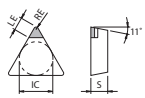
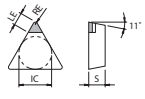
60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)				K
Gray cast iron (without scale)				
Nodular cast iron (with scale)				
Hard materials (Roughing)				H
Hard materials (Finishing)	○	○	◔	
Hard materials (Chip control)				
Sintered steel				-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	LE	CBN PVD KBN10M	CBN - KBN510	CBN - KBN525	Applicable toolholder
	 CBN surface type	TBGN	060102T00815	T00815	3	3.97	1.59	0.2	-			●	-
			060104T00815					0.4			●	●	
			060108T00815					0.8		○	●		
		TPGN	110304T00815ME	T00815	3	6.35	3.18	0.4	2.5			●	F113
		TPGN	110304T00815SE	T00815	1	6.35	3.18	0.4	2.5			●	
		TPGN	160302T00815SE	T00815	1	9.525	3.18	0.2	2.6			●	
			160304T00815SE					0.4	2.4		●	●	
			160308T00815SE					0.8	2.1			●	
	 Tough	TPGN	110304S01035SET	S01035	1	6.35	3.18	0.4	2.5			●	
		TPGN	160304S01035SET	S01035	1	9.525	3.18	0.4	2.4			●	

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

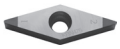
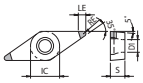
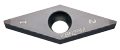
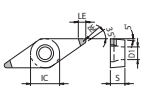
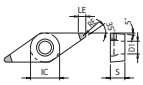
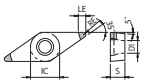
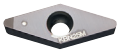
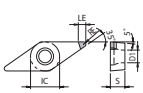
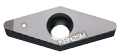
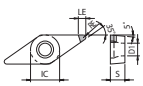
35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)														K
Gray cast iron (without scale)						◕		●						
Nodular cast iron (with scale)														
Hard materials (Roughing)					✖									H
Hard materials (Finishing)	●	●	○	◕						○	◔			
Hard materials (Chip control)														
Sintered steel							✖						◕	-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN										Applicable toolholder
											PVD							-			
						IC	S	D1	RE	LE	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475	KBN510	KBN525	KBN570	
	 Sharp edge	VBGW	110304MEF 110308MEF	F	2	6.35	3.18	2.8	0.4 0.8	2 1.7								● ●			● ●	E40~E43, E58 F90, F91 F94~F99
		VBGW	160404MEF 160408MEF	F	2	9.525	4.76	4.4	0.4 0.8	2 1.7								● ●			●	E41~E43 F90, F91 F94~F99
		VBGW	110302T00815ME 110304T00815ME 110308T00815ME	T00815	2	6.35	3.18	2.8	0.2 0.4 0.8	2.4 2 1.7	● ● ●	● ● ●	○ ○	● ● ●		● ●		● ● ●	● ● ●	● ● ●		E40~E43, E58 F90, F91 F94~F99
		VBGW	160402T00815ME 160404T00815ME 160408T00815ME	T00815	2	9.525	4.76	4.4	0.2 0.4 0.8	2.4 2 1.7	● ● ●	● ● ●	○ ○ ○	● ● ●	● ● ●	● ●		● ● ●	● ● ●			E41~E43 F90, F91 F94~F99
	 General purpose	VBGW	110304S01225MES 110308S01225MES	S01225	2	6.35	3.18	2.8	0.4 0.8	2 1.7	● ●	●						● ●				E40~E43, E58 F90, F91 F94~F99
		VBGW	160404S01225MES 160408S01225MES	S01225	2	9.525	4.76	4.4	0.4 0.8	2 1.7	● ●	●						● ●				E41~E43 F90, F91 F94~F99
	 Tough	VBGW	110302S01035MET 110304S01035MET 110308S01035MET	S01035	2	6.35	3.18	2.8	0.2 0.4 0.8	2.4 2 1.7	● ● ●		○	● ● ●	● ●					● ●		E40~E43, E58 F90, F91 F94~F99
		VBGW	160402S01035MET 160404S01035MET 160408S01035MET	S01035	2	9.525	4.76	4.4	0.2 0.4 0.8	2.4 2 1.7	● ● ●	●	○ ○ ○	● ● ●	● ●					● ●		E41~E43 F90, F91 F94~F99
		VBGW	110302T00815SE 110304T00815SE	T00815	1	6.35	3.18	2.8	0.2 0.4	2.8 2.4			○ ○	● ●					● ●	● ●		E40~E43, E58 F90, F91 F94~F99
		VBGW	160402T00815SE 160404T00815SE 160408T00815SE	T00815	1	9.525	4.76	4.4	0.2 0.4 0.8	2.4 2 1.7			○						● ●	● ●		E41~E43 F90, F91 F94~F99
	 Tough	VBGW	110304S01035SET 110308S01035SET	S01035	1	6.35	3.18	2.8	0.4 0.8	2 1.7					●					●		E40~E43, E58 F90, F91 F94~F99
		VBGW	160404S01035SET 160408S01035SET	S01035	1	9.525	4.76	4.4	0.4 0.8	2 1.7										● ●		E41~E43 F90, F91 F94~F99

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

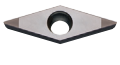
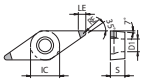
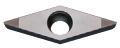
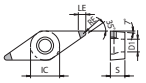
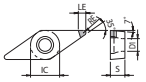
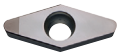
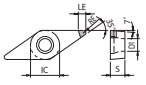
35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)										K
Gray cast iron (without scale)					◕	●				K
Nodular cast iron (with scale)										K
Hard materials (Roughing)										H
Hard materials (Finishing)	●	●	○	◕			○	◔		H
Hard materials (Chip control)										H
Sintered steel										-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					CBN						Applicable toolholder
					IC	S	D1	RE	LE	PVD				-		
										KBN020	KBN05M	KBN10M	KBN25M KBN60M	KBN475	KBN510 KBN525	
		VCGW 080202T00815ME 080204T00815ME 080208T00815ME	T00815	2	4.76	2.38	2.3	0.2 0.4 0.8	2 2 1.7	● ● ●	● ● ●	 ●	● ● 	● ● ●	● ● 	E59 F90, F91 F94~F99
	 Tough	VCGW 080202S01035MET 080204S01035MET 080208S01035MET	S01035	2	4.76	2.38	2.3	0.2 0.4 0.8	2 2 1.7	● ● ●	 	● ● ●	 	 	 	
		VCGW 080202T00815SE 080204T00815SE	T00815	1	4.76	2.38	2.3	0.2 0.4	2.4 2	 	 	○ ○	 	● ●	● ●	
	 Tough	VCGW 080204S01035SET 080208S01035SET	S01035	1	4.76	2.38	2.3	0.4 0.8	2 1.8	 	 	 	 	 	● ●	

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

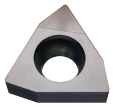
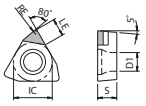
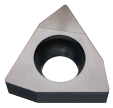
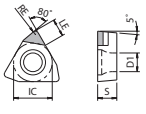
80° Trigon

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)	●	●	●	●	K
Gray cast iron (without scale)	●	●	●	●	
Nodular cast iron (with scale)	●	●	●	●	
Hard materials (Roughing)					H
Hard materials (Finishing)	○	◕	○	◔	
Hard materials (Chip control)					
Sintered steel					-

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)					CBN				Applicable toolholder
						IC	S	D1	RE	LE	PVD		-		
											KBN10M	KBN25M	KBN510	KBN525	
		WBGW	060102T00815L-SE 060104T00815L-SE	T00815	1	3.97	1.59	2.3	0.2 0.4	1.9	○ ○	● ●	● ●	● ●	F36 F100~F102
		WBGW	080202T00815L-SE 080204T00815L-SE	T00815	1	4.76	2.38	2.3	0.2 0.4	2.3	○ ○	● ●	 ●	● ●	
	 Tough	WBGW	060102S01035LSET 060104S01035LSET	S01035	1	3.97	1.59	2.3	0.2 0.4	1.9	 ●	● ●	 ●	● ●	
		WBGW	080202S01035LSET 080204S01035LSET	S01035	1	4.76	2.38	2.3	0.2 0.4	2.3	 ●	● ●	 ●	● ●	

● : Standard item ○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

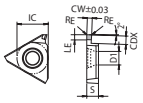
GBA

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)			K
Gray cast iron (without scale)			
Nodular cast iron (with scale)			
Hard materials (Roughing)			H
Hard materials (Finishing)	○	●	
Hard materials (Chip control)			
Sintered steel			-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)							Tolerance (mm)		CBN		Applicable toolholder
					CW	CDX	IC	S	D1	RE	LE	CW min.	CW max.	-		
														KBNS10	KBNS25	
	 External / Internal Grooving	GBA43R 125-020 150-020 200-020 250-020 300-020	E008	1	1.25 1.5 2 2.5 3	2 3.5 3.5 4 4	12.7	4.76	5.5	0.2	1.9	- 0.03	+0.03	● ● ● ● ●	● ● ● ● ●	G13~G17 G89
		GBA43L 125-020 150-020 200-020 250-020 300-020			1.25 1.5 2 2.5 3	2 3.5 3.5 4 4						- 0.03	+0.03	 ● ● 	● ● ● ● ●	

Right-hand shown
CDX shows available grooving depth.

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

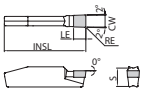
GDGS

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

Gray cast iron (with scale)			K
Gray cast iron (without scale)			
Nodular cast iron (with scale)			
Hard materials (Roughing)			H
Hard materials (Finishing)	●		
Hard materials (Chip control)			
Sintered steel		●	-

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					Tolerance (mm)		CBN		Applicable toolholder
					CW	S	RE	INSL	LE	CW min.	CW max.	PVD KBN05M	- KBN570	
	 External Grooving	GDGS 2020N-020NB	E008	1	2	4.3	0.2	20	2.9	- 0.03	+ 0.03	●		G34~G42
			E002										●	
		GDGS 3020N-040NB	E008	1	3	4.3	0.4	20	2.9	- 0.03	+ 0.03	●		
			E002										●	
		GDGS 4020N-040NB	E008	1	4	4.3	0.4	20	2.9	- 0.03	+ 0.03	●		
			E002										●	
		GDGS 5020N-040NB	E008	1	5	4.3	0.4	20	2.9	- 0.03	+ 0.03	●		G34 G40~G42
			E002										●	
		GDGS 6020N-040NB	E008	1	6	4.3	0.4	20	2.9	- 0.03	+ 0.03	●		

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

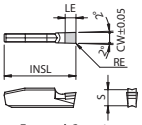
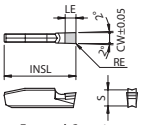
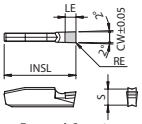
GMN

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

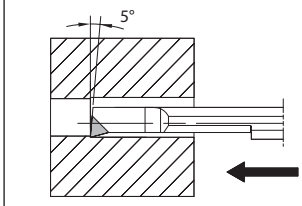
Gray cast iron (with scale)			K
Gray cast iron (without scale)			
Nodular cast iron (with scale)			
Hard materials (Roughing)			H
Hard materials (Finishing)	○	●	
Hard materials (Chip control)			
Sintered steel			-

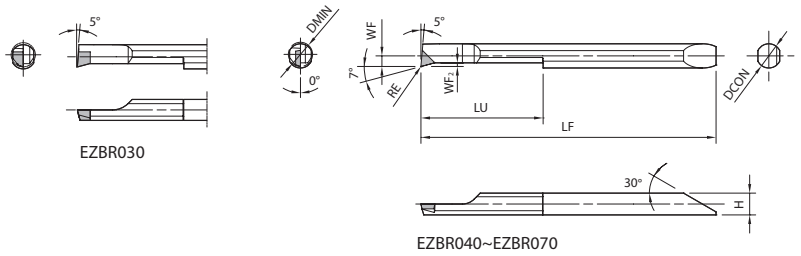
Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					Tolerance (mm)		CBN		Applicable toolholder
					CW	S	RE	INSL	LE	CW min.	CW max.	-		
												KBN510	KBN525	
	 External Grooving	GMN 2	E008	1	2	4.3	0.2	20	2.9	- 0.05	+ 0.05	○	○	G55 G57
	 External Grooving	GMN 3	E008	1	3	4.3	0.4	20	2.9	- 0.05	+ 0.05	○	○	G55~G58
	 External Grooving	GMN 4	E008	1	4	4.3	0.4	20	2.9	- 0.05	+ 0.05	○	○	

○ : Check availability

CBN & PCD Inserts are sold in 1 piece boxes

EZB-NB (Boring)





Right-hand shown

Dimensions

How to read pages of "Turning inserts" See page B15

Cutting edge preparation

Symbol	Specification	Example	
F	Sharp edge	F	Sharp edge
E	R-honed	E008	R0.08mm honed
T	Chamfered	T01215	0.12mm × 15° chamfered
S	Chamfered and R-honed	S01225	0.12mm × 25° chamfered and R-honed

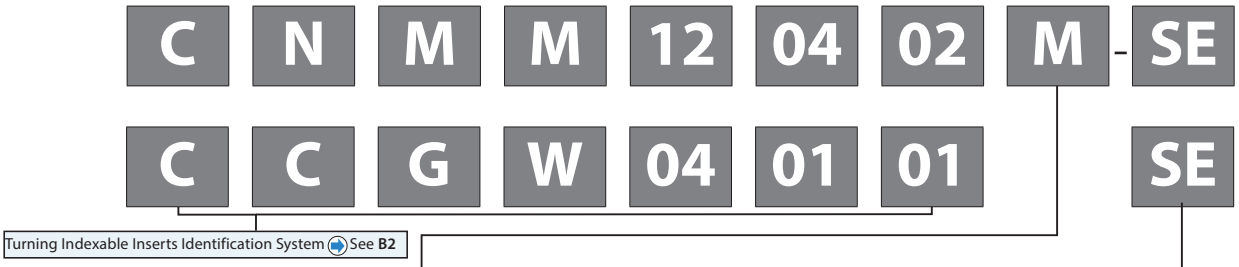
Gray cast iron (with scale)		K
Gray cast iron (without scale)		
Nodular cast iron (with scale)		
Hard materials (Roughing)		H
Hard materials (Finishing)	●	
Hard materials (Chip control)		
Sintered steel		-

Description	Edge preparation type	No. of edges	Dimension (mm)								Tolerance (mm)		CBN	PVD	KBN05M	Applicable sleeve F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.				
EZBR 030030-003NB	T00815	1	3	3	2.6	38.8	13	1.25	0.3	0.035	-0.015	+0.015	●			EZH030...
EZBR 040040-003NB	T00815	1	4	4	3.6	48.8	20	1.75	0.5	0.035	-0.015	+0.015	●			EZH040...
EZBR 050050-003NB	T00815	1	5	5	4.6	58.1	25	2.25	0.5	0.035	-0.015	+0.015	●			EZH050...
EZBR 060060-003NB	T00815	1	6	6	5.6	66.1	30	2.75	0.5	0.035	-0.015	+0.015	●			EZH060...
EZBR 070070-003NB	T00815	1	7	7	6.6	74.1	35	3.25	0.5	0.035	-0.015	+0.015	●			EZH070...

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

Identification system (Turning insert / PCD)

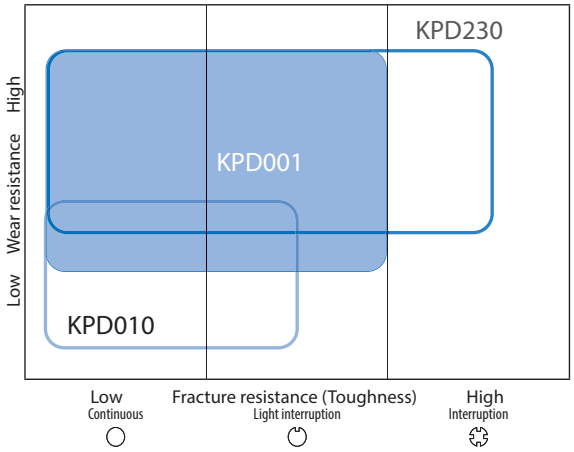


Insert type	Description	Manufacture´s option 1	Manufacture´s option 2	Series name	Edge length	Number of edges	Re-grinding
Negative	CNMM120402M-SE	M (Indicates the tool is for negative inserts/toolholders)	SE	Small edge	Short (Small edge)	1	Not recommended
	CNMM120402M-NE		NE	New value edge	Long (85% length compared with no Indication`s cutting edge)	1	Possible
	CNMM120402M		Without indication	-	Long	1	
Positive	CCGW040101SE	-	SE	Small edge	Short (Small edge)	1	Not recommended
	CCGW040101NE		NE	New value edge	Long (85% length compared with no Indication`s cutting edge)	1	Possible
	CCGW040101		Without indication	-	Long	1	

• No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge prep. are sharp edge.
• "M" in manufacturer's option 1 indicates the inserts are applicable to negative toolholders.

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

Application map



Grades	Applications	Features
KPD001 Average grain size under 0.5 µm	• High speed machining of non-ferrous metals and brass • High speed machining of plastics • Machining of carbide	• The world highest level micro-grain diamond • High edge strength, and superior to wear resistance, fracture resistance and edge sharpening performance
KPD010 Average grain size 10 µm	• High speed machining of non-ferrous metals and brass • High speed machining of plastics • Machining of carbide	• Good balance of wear resistance and flexural strength • General purpose
KPD230 Mixture of fine grain with average grain size 2~30 µm and coarse grain	• High speed machining of non-ferrous metals and brass • High speed machining of plastics	• High density PCD with mixture of coarse and fine grains features excellent abrasive wear resistance and fracture resistance
KPD250 Average grain size 25 µm Made to order	• High speed machining of high silicon aluminium alloy • Machining of carbide	• Coarse grain PCD Ave. grain size 25 µm • Superior to wear resistance

Recommended cutting conditions

Workpiece material	Insert grades		Cutting conditions				Remarks
	KPD001	KPD010	Vc (m/min)	ap (mm) Small edge and positive inserts	ap (mm) Negative inserts	f (mm/rev)	
Aluminum alloys Zinc alloys	●	○	300 ~ 1,500	~1.0	~2.0	0.03 ~ 0.5	Both: Dry and coolant
Copper, Brass, Bronze	●	○	300 ~ 1,000	~1.0	~2.0	0.03 ~ 0.5	
Magnesium alloys	●	○	400 ~ 1,200	~1.0	~2.0	0.03 ~ 0.5	
Carbide	●	○	10 ~ 30	~0.3	~0.3	0.03 ~ 0.1	
Titanium alloys	●	○	100 ~ 200	~1.0	~2.0	0.05 ~ 0.2	Coolant
Glass fiber reinforced plastics Carbon fiber	●	○	100 ~ 600	~1.0	~2.0	0.05 ~ 0.5	Dry
Silica filling plastic Particle board	●	○	400 ~ 800	~1.0	~2.0	0.05 ~ 0.5	

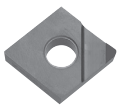
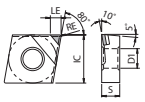
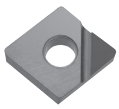
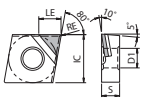
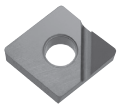
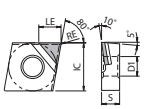
●: 1st Recommendation ○: 2nd Recommendation

80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	CNMM 120402M-SE CNMM 120404M-SE CNMM 120408M-SE	F	1	12.7	4.76	5.16	0.2 0.4 0.8	2.8 2.8 2.7	● ● ●	● ● ●	D8~D10 F116 F125 F126
	 New Value Edge	CNMM 120402M-NE CNMM 120404M-NE CNMM 120408M-NE	F	1	12.7	4.76	5.16	0.2 0.4 0.8	5.1 5 4.9	● ● ●		
		CNMM 120402M CNMM 120404M CNMM 120408M CNMM 120412M	F	1	12.7	4.76	5.16	0.2 0.4 0.8 1.2	5.8 5.8 5.7 5.6	● ● ● ●	● ● ● ●	

● : Standard item

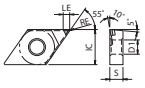
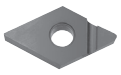
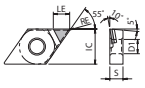
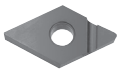
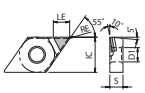
CBN & PCD Inserts are sold in 1 piece boxes

55° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	◐	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	◐	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	DNMM 150402M-SE	F	1	12.7	4.76	5.16	0.2	2.8	●	●	D13~D17 F118, F130 F132~F134
		DNMM 150404M-SE						0.4	2.6	●	●	
		DNMM 150408M-SE						0.8	2.2	●	●	
	 New Value Edge	DNMM 150402M-NE	F	1	12.7	4.76	5.16	0.2	5.2	●		
		DNMM 150404M-NE						0.4	5	●		
		DNMM 150408M-NE						0.8	4.6	●		
		DNMM 150402M	F	1	12.7	4.76	5.16	0.2	5.9	●	●	
		DNMM 150404M						0.4	5.8	●	●	
		DNMM 150408M						0.8	5.4	●	●	

● : Standard item

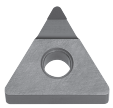
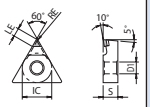
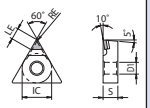
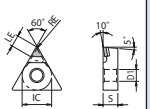
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	TNMM 160402M-SE 160404M-SE 160408M-SE	F	1	9.525	4.76	3.81	0.2 0.4 0.8	2.7 2.6 2.3	● ● ●	● ● ●	D22~D25 D27, D28 F120 F137 F138
	 New Value Edge	TNMM 160402M-NE 160404M-NE 160408M-NE	F	1	9.525	4.76	3.81	0.2 0.4 0.8	3.2 3.1 2.8	● ● ●		
		TNMM 160402M 160404M 160408M 160412M	F	1	9.525	4.76	3.81	0.2 0.4 0.8 1.2	3.8 3.6 3.3 3	● ● ● ●	● ● ● ●	

● : Standard item

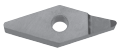
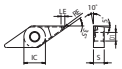
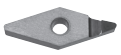
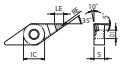
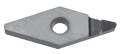
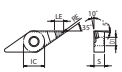
CBN & PCD Inserts are sold in 1 piece boxes

35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD KPD001	PCD KPD010	Applicable toolholder
	 Small Edge	VNMM 160402M-SE	F	1	9.525	4.76	3.81	0.2	2.9	●	●	D30~D39
		VNMM 160404M-SE	F	1	9.525	4.76	3.81	0.4	2.5	●	●	
		VNMM 160408M-SE	F	1	9.525	4.76	3.81	0.8	1.6	●	●	
	 New Value Edge	VNMM 160402M-NE	F	1	9.525	4.76	3.81	0.2	4.7	●		
		VNMM 160404M-NE	F	1	9.525	4.76	3.81	0.4	4.2	●		
		VNMM 160408M-NE	F	1	9.525	4.76	3.81	0.8	3.4	●		
		VNMM 160402M	F	1	9.525	4.76	3.81	0.2	5.3	●	●	
		VNMM 160404M	F	1	9.525	4.76	3.81	0.4	4.8	●	●	
		VNMM 160408M	F	1	9.525	4.76	3.81	0.8	4	●		

● : Standard item

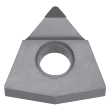
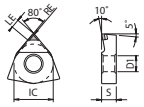
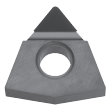
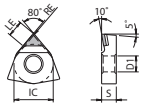
CBN & PCD Inserts are sold in 1 piece boxes

80° Trigon

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	WNMM 080402M-SE	F	1	12.7	4.76	5.16	0.2	2.8	●		D43~D46 F140 F142 F143
		WNMM 080404M-SE						0.4	2.8	●	●	
		WNMM 080408M-SE						0.8	2.7		●	
	 New Value Edge	WNMM 080402M-NE	F	1	12.7	4.76	5.16	0.2	5	●		
		WNMM 080404M-NE						0.4		●		

● : Standard item

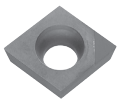
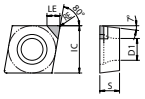
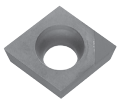
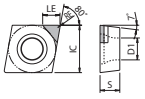
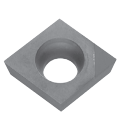
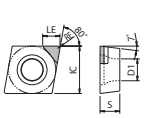
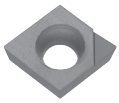
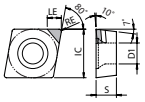
CBN & PCD Inserts are sold in 1 piece boxes

80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	N
Non-ferrous metals (without interruption)	N
Titanium alloys (with interruption)	S
Titanium alloys (without interruption)	S

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD KPD001	PCD KPD010	Applicable toolholder
	 Small Edge	CCGW 040101SE 040102SE 040104SE	F	1	4.3	1.8	2.3	0.1 0.2 0.4	1.3	● ● ●		F31, F32 F60, F62
		CCGW 060201SE 060202SE 060204SE	F	1	6.35	2.38	2.8	0.1 0.2 0.4	2.3	● ● ●		E26, E28, E54 F31, F32 F60~F62
		CCGW 09T302SE 09T304SE 09T308SE	F	1	9.525	3.97	4.4	0.2 0.4 0.8	2.7	● ● ●		E26~E28, E54 F60~F62 F122
	 New Value Edge	CCGW 040101NE 040102NE	F	1	4.3	1.8	2.3	0.1 0.2	1.7 1.6	● ●		F31, F32 F60, F62
		CCGW 060201NE 060202NE 060204NE	F	1	6.35	2.38	2.8	0.1 0.2 0.4	3.1 3 3	● ● ●		E26, E28, E54 F31, F32 F60~F62
		CCGW 09T301NE 09T302NE 09T304NE 09T308NE	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3	● ● ● ●		E26~E28, E54 F60~F62 F122
		CCGW 040101 040102 040104	F	1	4.3	1.8	2.3	0.1 0.2 0.4	1.9	● ● ●	 ● ●	F31, F32 F60, F62
		CCGW 060201 060202 060204	F	1	6.35	2.38	2.8	0.1 0.2 0.4	3.5		● ● ●	E26, E28, E54 F31, F32 F60~F62
		CCGW 09T301 09T302 09T304 09T308	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.8 3.8 3.7 3.6	● ● ● 	 ● ● ●	E26~E28, E54 F60~F62 F122
	 Small Edge	CCMT 060202SE 060204SE	F	1	6.35	2.38	2.8	0.2 0.4	2.2	● ●		E26, E28, E54 F31, F32 F60~F62
		CCMT 09T301SE 09T302SE 09T304SE 09T308SE	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	2.7	● ● ● ●		E26~E28, E54 F60~F62 F122
	 New Value Edge	CCMT 060201NE 060202NE 060204NE	F	1	6.35	2.38	2.8	0.1 0.2 0.4	2.8	● ● ●		E26, E28, E54 F31, F32 F60~F62
		CCMT 09T301NE 09T302NE 09T304NE 09T308NE	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.4 3.4 3.3	● ● ● ●		E26~E28, E54 F60~F62 F122
		CCMT 060201 060202 060204	F	1	6.35	2.38	2.8	0.1 0.2 0.4	3.3 3.3 3.2	● ● ●	● ● ●	E26, E28, E54 F31, F32 F60~F62
		CCMT 09T301 09T302 09T304 09T308	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.9 3.9 3.9 3.8	● ● ● 	● ● ● ●	E26~E28, E54 F60~F62 F122

● : Standard item

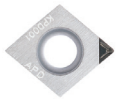
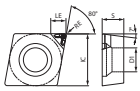
CBN & PCD Inserts are sold in 1 piece boxes

80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Chip Control	CCMT 09T302APD 09T304APD 09T308APD	F	1	9.525	3.97	4.4	0.2 0.4 0.8	2.7	● ● ●		E26~E28, E54 F60~F62 F122

● : Standard item

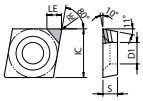
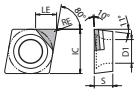
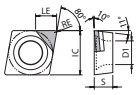
CBN & PCD Inserts are sold in 1 piece boxes

80° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	◉	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	◉	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD KPD001	PCD KPD010	Applicable toolholder
	 Small Edge	CPMH 090302SE	F	1	9.525	3.18	4.5	0.2	2.7	●		F64 F65
		CPMH 090304SE	F	1	9.525	3.18	4.5	0.4	2.7	●		
	 New Value Edge	CPMH 080202NE	F	1	7.94	2.38	3.5	0.2	3.2	●		
		CPMH 080204NE	F	1	7.94	2.38	3.5	0.4	3.2	●		
		CPMH 090301NE	F	1	9.525	3.18	4.5	0.1	3.4	●		
		CPMH 090302NE	F	1	9.525	3.18	4.5	0.2	3.4	●		
		CPMH 090304NE	F	1	9.525	3.18	4.5	0.4	3.4	●		
		CPMH 090308NE	F	1	9.525	3.18	4.5	0.8	3.3	●		
		CPMH 080201	F	1	7.94	2.38	3.5	0.1		●		
		CPMH 080202	F	1	7.94	2.38	3.5	0.2	3.7	●	●	
		CPMH 080204	F	1	7.94	2.38	3.5	0.4		●	●	
		CPMH 090301	F	1	9.525	3.18	4.5	0.1	4		●	
		CPMH 090302	F	1	9.525	3.18	4.5	0.2	3.9	●	●	
		CPMH 090304	F	1	9.525	3.18	4.5	0.4	3.9	●	●	
		CPMH 090308	F	1	9.525	3.18	4.5	0.8	3.8		●	

● : Standard item

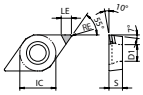
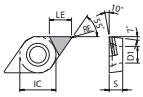
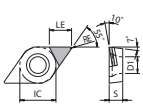
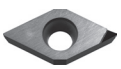
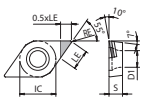
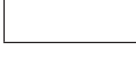
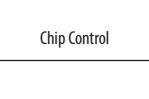
CBN & PCD Inserts are sold in 1 piece boxes

55° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	DCMT 070201SE 070202SE 070204SE	F	1	6.35	2.38	2.8	0.1 0.2 0.4	2.7	● ● ●		E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMT 11T301SE 11T302SE 11T304SE 11T308SE	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	2.7	● ● ● ●		E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
	 New Value Edge	DCMT 070201NE 070202NE 070204NE	F	1	6.35	2.38	2.8	0.1 0.2 0.4	3.4 3.4 3.2	● ● ●		E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMT 11T301NE 11T302NE 11T304NE 11T308NE	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	3.4 3.3 3.2 2.8	● ● ● ●		E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
		DCMT 070201 070202 070204	F	1	6.35	2.38	2.8	0.1 0.2 0.4	4 3.9 3.7	● ● ● ● ● ●		E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMT 11T301 11T302 11T304 11T308	F	1	9.525	3.97	4.4	0.1 0.2 0.4 0.8	4 3.9 3.7 3.3	● ● ● ● ● ● ● ●		E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
	 New Value Edge	DCMT 070202R-NE 070202L-NE 070204R-NE 070204L-NE	F	1	6.35	2.38	2.8	0.2 0.2 0.4 0.4	3.3 3.3 3.2 3.2	● ● ● ●		E29, E31, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76
		DCMT 11T302R-NE 11T302L-NE 11T304R-NE 11T304L-NE	F	1	9.525	3.97	4.4	0.2 0.2 0.4 0.4	3.3 3.3 3.2 3.2	● ● ● ●		E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123
	 Chip Control	DCMT 11T302APD 11T304APD 11T308APD	F	1	9.525	3.97	4.4	0.2 0.4 0.8	2.7	● ● ●		E23, E29~E32, E34 E35, E55, E56 F66~F68 F70~F72 F74~F76, F123

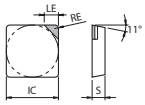
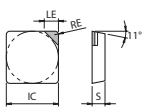
● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

90° Square

How to read pages of "Turning inserts" See page B15

Cutting edge preparation			Non-ferrous metals (with interruption)	●	N
PCD all items	F	Sharp edge	Non-ferrous metals (without interruption)	●	
			Titanium alloys (with interruption)	●	S
			Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 New Value Edge	SPGN 120304NE	F	1	12.7	3.18	0.4	3.6	●		F112
		SPGN 120304	F	1	12.7	3.18	0.4	4.2		●	

● : Standard item

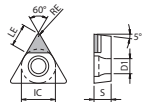
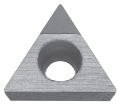
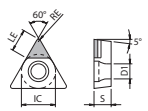
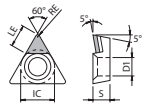
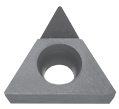
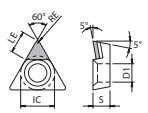
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 New Value Edge	TBGW 060102NE	F	1	3.97	1.59	2.4	0.2	2.1	●		F33, F34 F80~F82 F86, F87
		TBGW 060104NE						0.4	1.9	●		
		TBGW 060102	F	1	3.97	1.59	2.4	0.2	2.4	●		
		TBGW 060104						0.4	2.2	●		
	 New Value Edge	TBMT 060101NE	F	1	3.97	1.59	2.4	0.1	2.2	●		
		TBMT 060102NE						0.2	2.1	●		
		TBMT 060104NE						0.4	2	●		
		TBMT 060108NE						0.8	1.7	●		
		TBMT 060102	F	1	3.97	1.59	2.4	0.2	2.5	●	●	
		TBMT 060104						0.4	2.3		●	
		TBMT 060108						0.8	2	●		

● : Standard item

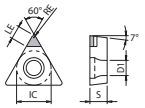
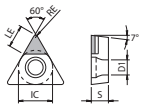
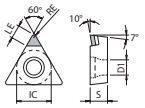
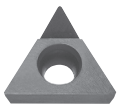
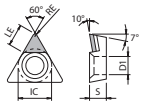
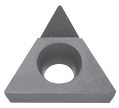
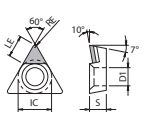
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD KPD001	PCD KPD010	Applicable toolholder
	 Small Edge	TCGW 110302SE	F	1	6.35	3.18	2.8	0.2	2.5		●	E38
		TCGW 110304SE	F	1	6.35	3.18	2.8	0.4	2.4		●	
	 New Value Edge	TCGW 110302NE	F	1	6.35	3.18	2.8	0.2	3.3	●		
		TCGW 110304NE	F	1	6.35	3.18	2.8	0.4	3.2	●		
	 Small Edge	TCMT 110301SE	F	1	6.35	3.18	2.8	0.1	2.6		●	
		TCMT 110302SE	F	1	6.35	3.18	2.8	0.2	2.5		●	
		TCMT 110304SE	F	1	6.35	3.18	2.8	0.4	2.4		●	
	 New Value Edge	TCMT 080202NE	F	1	4.76	2.38	2.5	0.2	2.1	●		
		TCMT 110302NE	F	1	6.35	3.18	2.8	0.2	3.4	●		
		TCMT 080202	F	1	4.76	2.38	2.5	0.2	2.4		●	
		TCMT 080204	F	1	4.76	2.38	2.5	0.4	2.2		●	

● : Standard item

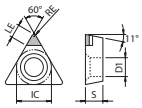
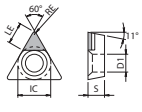
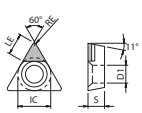
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	TPGB 090202SE	F	1	5.56	2.38	3.2	0.2	2.1	●		F33, F34 F80~F82, F86
		TPGB 090204SE						0.4		●		
		TPGB 090208SE						0.8		●		
		TPGB 110301SE	F	1	6.35	3.18	3.3	0.1	2.7	●	●	E39
		TPGB 110302SE						0.2	2.6	●	●	F80~F82
		TPGB 110304SE						0.4	2.5	●	●	F84, F85
		TPGB 160302SE	F	1	9.525	3.18	4.7	0.2	2.6	●	●	F80~F82
		TPGB 160304SE						0.4	2.4	●	●	F84
	 New Value Edge	TPGB 080202NE	F	1	4.76	2.38	2.3	0.2	2.2	●		E39 F80~F82, F86
		TPGB 080204NE						0.4	2.1	●		
		TPGB 080208NE						0.8	1.8	●		
		TPGB 090202NE	F	1	5.56	2.38	3.2	0.2	2.7	●		F33, F34
		TPGB 090204NE						0.4	2.6	●		F80~F82, F86
		TPGB 110302NE	F	1	6.35	3.18	3.3	0.2	3.4	●		E39
		TPGB 110304NE						0.4	3.3	●		F80~F82
		TPGB 110308NE						0.8	3	●		F84, F85
		TPGB 160304NE	F	1	9.525	3.18	4.7	0.4	3.2	●		F80~F82
		TPGB 160308NE						0.8	2.9	●		F84
		TPGB 080202	F	1	4.76	2.38	2.3	0.2	2.6	●	●	E39
		TPGB 080204						0.4	2.4	●	●	F80~F82, F86
		TPGB 090202	F	1	5.56	2.38	3.2	0.2	3.2	●		F33, F34
		TPGB 090204						0.4	3	●	●	F80~F82, F86
		TPGB 110302	F	1	6.35	3.18	3.3	0.2	3.9	●	●	E39
		TPGB 110304						0.4	3.7	●	●	F80~F82
		TPGB 110308						0.8	3.4		●	F84, F85

● : Standard item

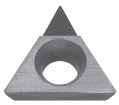
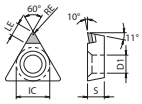
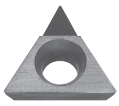
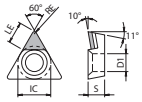
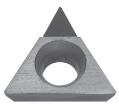
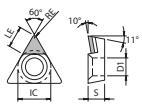
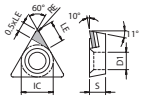
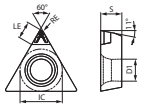
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	TPMH 080202SE	F	1	4.76	2.38	2.3	0.2	2	●		E39
		080204SE						0.4	1.8	●		F80~F82, F86
		TPMH 090202SE	F	1	5.56	2.38	3.2	0.2	2.4	●		F33, F34
		090204SE						0.4	2.2	●		F80~F82, F86
		TPMH 110301SE	F	1	6.35	3.18	3.3	0.1	2.7		●	E39
		110302SE						0.2	2.6	●	●	F80~F82
		110304SE						0.4	2.5	●	●	F84, F85
		TPMH 160302SE	F	1	9.525	3.18	4.7	0.2	2.6	●		F80~F82
		160304SE						0.4	2.4	●	●	F84
	 New Value Edge	TPMH 080201NE	F	1	4.76	2.38	2.3	0.1	2.3	●		E39
		080202NE						0.2	2.2	●		F80~F82, F86
		080204NE						0.4	2.1	●		
		TPMH 090201NE	F	1	5.56	2.38	3.2	0.1	2.7	●		F33, F34
		090202NE						0.2	2.6	●		F80~F82, F86
		090204NE						0.4	2.5	●		
		090208NE						0.8	2.2	●		
		TPMH 110301NE	F	1	6.35	3.18	3.3	0.1	3.4	●		E39
		110302NE						0.2	3.3	●		F80~F82
		110304NE						0.4	3.2	●		F84, F85
		110308NE						0.8	2.9	●		
		TPMH 160304NE	F	1	9.525	3.18	4.7	0.4	3.3	●		F80~F82
		160308NE						0.8	3	●		F84
		TPMH 080202	F	1	4.76	2.38	2.3	0.2	2.5	●	●	E39
		080204						0.4	2.3	●	●	F80~F82, F86
		TPMH 090201	F	1	5.56	2.38	3.2	0.1	3	●		F33, F34
		090202						0.2	2.9	●	●	F80~F82, F86
		090204						0.4	2.8	●	●	
		TPMH 110301	F	1	6.35	3.18	3.3	0.1	3.9	●	●	E39
		110302						0.2	3.9	●	●	F80~F82
		110304						0.4	3.7	●	●	F84, F85
		110308						0.8	3.4		●	
		TPMH 160302	F	1	9.525	3.18	4.7	0.2	4	●	●	
		160304						0.4	3.8	●	●	
		160308						0.8	3.6		●	
	 New Value Edge	TPMH 110302L-NE	F	1	6.35	3.18	3.3	0.2	3.8	●		E39
		110304L-NE						0.4	3.6	●		F80~F82
												F84, F85
	 Chip Control	TPMT 110302APD	F	1	6.35	3.18	3.3	0.2	2.6	●		E39
		110304APD						0.4	2.5	●		F80~F82
		110308APD						0.8	2.5	●		F84, F85

● : Standard item

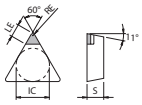
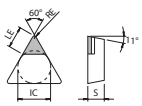
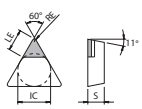
CBN & PCD Inserts are sold in 1 piece boxes

60° Triangle

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	TPGN 110301SE	F	1	6.35	3.18	0.1	2.6	●		F113
		TPGN 110302SE	F	1	6.35	3.18	0.2	2.5	●	●	
		TPGN 110304SE	F	1	6.35	3.18	0.4	2.4	●	●	
		TPGN 160301SE	F	1	9.525	3.18	0.1	2.6		●	
		TPGN 160302SE	F	1	9.525	3.18	0.2	2.6	●	●	
		TPGN 160304SE	F	1	9.525	3.18	0.4	2.4	●	●	
	 New Value Edge	TPGN 160304NE	F	1	9.525	3.18	0.4	3.2	●		
		TPGN 160308NE	F	1	9.525	3.18	0.8	2.9	●		
		TPGN 110302	F	1	6.35	3.18	0.2	3.9	●	●	
		TPGN 110304	F	1	6.35	3.18	0.4	3.7	●	●	
		TPGN 160304	F	1	9.525	3.18	0.4	3.7	●	●	
		TPGN 160308	F	1	9.525	3.18	0.8	3.4		●	

● : Standard item

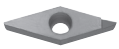
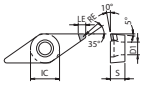
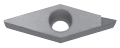
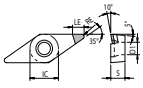
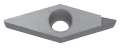
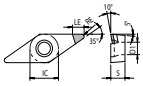
CBN & PCD Inserts are sold in 1 piece boxes

35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	VBMT 110301SE 110302SE 110304SE 110308SE	F	1	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.5 2.3 1.9 1.9	● ● ● ●		E40~E43 E58 F90, F91 F94~F99
		VBMT 160401SE 160402SE 160404SE 160408SE	F	1	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.7 2.5 2.1 2	● ● ● ●		E41~E43 F90, F91 F94~F99
	 New Value Edge	VBMT 110301NE 110302NE 110304NE 110308NE	F	1	6.35	3.18	2.8	0.1 0.2 0.4 0.8	2.6 2.4 2 3.1	● ● ● ●		E40~E43 E58 F90, F91 F94~F99
		VBMT 160401NE 160402NE 160404NE 160408NE	F	1	9.525	4.76	4.4	0.1 0.2 0.4 0.8	2.8 2.6 2.2 3	● ● ● ●		E41~E43 F90, F91 F94~F99
		VBMT 110301 110302 110304 110308	F	1	6.35	3.18	2.8	0.1 0.2 0.4 0.8	3 2.8 2.4 3.5	● ● ● ●	● ● ● ●	E40~E43 E58 F90, F91 F94~F99
		VBMT 160401 160402 160404 160408	F	1	9.525	4.76	4.4	0.1 0.2 0.4 0.8	3.2 3 2.6 3.5	● ● ● ●	 ● ● ●	E41~E43 F90, F91 F94~F99

● : Standard item

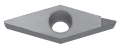
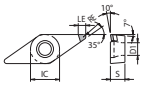
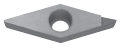
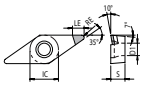
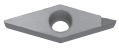
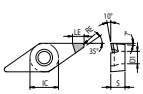
CBN & PCD Inserts are sold in 1 piece boxes

35° Rhombic

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	VCMT 080202SE 080204SE 080208SE	F	1	4.76	2.38	2.3	0.2 0.4 0.8	1.4	● ● ●		E59 F90, F91 F94~F99
	 New Value Edge	VCMT 080201NE 080202NE 080204NE 080208NE	F	1	4.76	2.38	2.3	0.1 0.2 0.4 0.8	1.7 1.7 1.8 1.9	● ● ● ●		
		VCMT 080201 080202 080204 080208	F	1	4.76	2.38	2.3	0.1 0.2 0.4 0.8	2 2 2.1 2.2	 ● ● ●	● ● ● ●	

● : Standard item

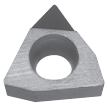
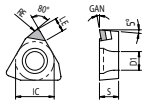
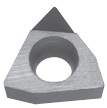
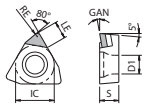
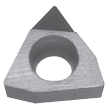
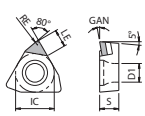
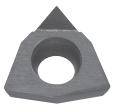
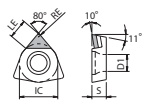
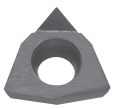
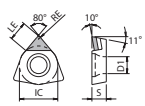
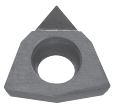
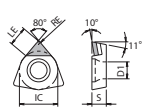
CBN & PCD Inserts are sold in 1 piece boxes

80° Trigon

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	N
Non-ferrous metals (without interruption)	N
Titanium alloys (with interruption)	S
Titanium alloys (without interruption)	S

Insert		Description		Edge preparation type	No. of edges	Dimension (mm) IC	S	D1	RE	LE	PCD - KPD001	PCD - KPD010	Applicable toolholder
	 Small Edge	WBMT	060102L-SE	F	1	3.97	1.59	2.3	0.2	1.3	●		F36 F100~F102
		WBMT	080202L-SE	F	1	4.76	2.38	2.3	0.2	1.6	●		
	 New Value Edge	WBMT	060101L-NE 060102L-NE 060104L-NE	F	1	3.97	1.59	2.3	0.1 0.2 0.4	1.7 1.6 1.6	● ● ●		
		WBMT	080202L-NE 080204L-NE	F	1	4.76	2.38	2.3	0.2 0.4	2.1	● ●		
		WBMT	060101L 060102L 060104L	F	1	3.97	1.59	2.3	0.1 0.2 0.4	1.9	● ● ●	 ● ●	
		WBMT	080202L 080204L	F	1	4.76	2.38	2.3	0.2 0.4	2.4 2.3	● ●	● ●	
	 Small Edge	WPMT	110202SE	F	1	6.35	2.38	2.8	0.2	2.1	●		F100~F102
	 New Value Edge	WPMT	110202NE	F	1	6.35	2.38	2.8	0.2	2.7	●		
		WPMT	110202	F	1	6.35	2.38	2.8	0.2	3.1		●	

● : Standard item

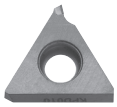
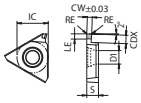
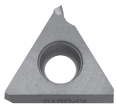
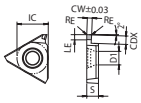
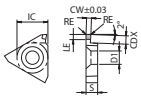
CBN & PCD Inserts are sold in 1 piece boxes

GBA/TGF

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	N
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	S

Insert		Description	Edge preparation type	No. of edges	Dimension (mm) CW	CDX	IC	S	D1	RE	LE	Tolerance (mm) CW min.	CW max.	PCD KPD001	PCD KPD010	Applicable toolholder
		GBA32R 125-010 150-010 200-010	F	1	1.25 1.5 2	2 2 2.5	9.525	3.18	4.4	0.1	1.7	- 0.03	+ 0.03	● ● ●	● ● 	G13~G17 G89
		GBA43R 125-010 150-010 200-010 250-010 300-010	F	1	1.25 1.5 2 2.5 3	2 3.5 3.5 4 4	12.7	4.76	5.5	0.1	1.9	- 0.03	+0.03	● ● ● ● ●	● ● ● ● ●	
		GBA43L 125-010 150-010 200-010 250-010 300-010			1.25 1.5 2 2.5 3	2 3.5 3.5 4 4								 ● ● ● ●	● ● ● ● ●	
		TGF32R 125-010 150-010 200-010	F	1	1.25 1.5 2	2 2 2.5	9.525	3.18	4.6	0.1	1.7 1.7 1.9	- 0.03	+ 0.03	□ □ □		KTGFR....-16 KTGFR....-16F S...-KTGFL16

CDX shows available grooving depth.
Right-hand shown

● : Standard item □ : Deleted from the next catalog

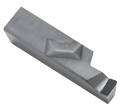
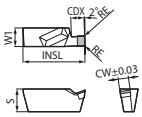
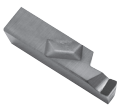
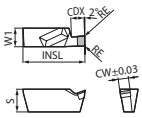
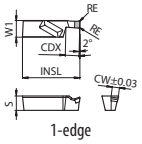
CBN & PCD Inserts are sold in 1 piece boxes

GV/GVF

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description		Edge preparation type	No. of edges	Dimension (mm)						Tolerance (mm)		PCD	Applicable toolholder
						CW	CDX	S	RE	INSL	W1	CW min.	CW max.	KPD010	
	 1-edge	GVR	145-020A 200-020A	F	1	1.45 2	2.3	5	0.2	12	4	- 0.03	+0.03	● ●	G86~G88
	 1-edge	GVR	200-020B 250-020B	F	1	2 2.5	3.2	5.5	0.2	15	4.5	- 0.03	+0.03	● ●	
	 1-edge	GVFR	250-020B 300-020B 400-020B	F	1	2.5 3 4	4.8 4.8 5.3	5	0.2	20	5.8	- 0.03	+0.03	● ● MTO	G127~G130 G133
		GVFL	250-020B 300-020B 400-020B			2.5 3 4	4.8 4.8 5.3							● ● MTO	
		GVFR	350-040C	F	1	3.5	6.8	7	0.4	27	7	- 0.03	+ 0.03	MTO	

CDX shows available grooving depth.
Right-hand shown

● : Standard item MTO : Made to order

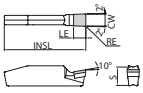
CBN & PCD Inserts are sold in 1 piece boxes

GDGS

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					Tolerance (mm)		PCD	Applicable toolholder
					CW	S	RE	INSL	LE	CW min.	CW max.	- / KPD001	
		GDGS 2020N-020NB	F	1	2	4.3	0.2	20	2.9	-0.03	+0.03	●	G34~G42
		GDGS 3020N-020NB	F	1	3	4.3	0.2	20	2.9	-0.03	+0.03	●	
		GDGS 4020N-020NB	F	1	4	4.3	0.2	20	2.9	-0.03	+0.03	●	
		GDGS 5020N-020NB	F	1	5	4.3	0.2	20	2.9	-0.03	+0.03	●	G34 G40~G42
		GDGS 6020N-020NB	F	1	6	4.3	0.2	20	2.9	-0.03	+0.03	●	

● : Standard item

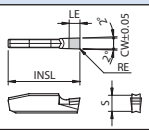
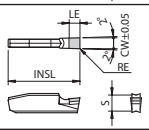
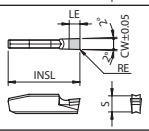
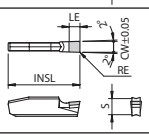
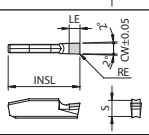
CBN & PCD Inserts are sold in 1 piece boxes

GMN

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					Tolerance (mm)		PCD		Applicable toolholder
					CW	S	RE	INSL	LE	CW min.	CW max.	-		
												KPD001	KPD010	
		GMN 2	F	1	2	4.3	0.2	20	2.9	- 0.05	+ 0.05	○	○	G55 G57
		GMN 3	F	1	3	4.3	0.2	20	2.9	- 0.05	+ 0.05	○	○	G55~G58
		GMN 4	F	1	4	4.3	0.2	20	2.9	- 0.05	+ 0.05	○	○	
		GMN 5	F	1	5	4.3	0.2	20	2.9	- 0.05	+ 0.05	○	○	
		GMN 6	F	1	6	4.3	0.2	20	2.9	- 0.05	+ 0.05		○	G56 G57

○ : Check availability

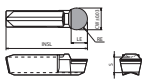
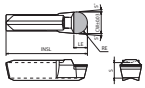
CBN & PCD Inserts are sold in 1 piece boxes

GMGW

How to read pages of "Turning inserts" See page B15

Cutting edge preparation	
GMGW	R-honed

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Insert		Description	Edge preparation type	No. of edges	Dimension (mm)					Tolerance (mm)		PCD	Applicable toolholder
					CW	S	RE	INSL	LE	CW min.	CW max.	KPD001	
		GMGW 6030-30R	F	1	6	5.5	3	30	4.5	- 0.03	+0.03	●	G67
		GMGW 8030-40R	F	1	8	5.5	4	30	6	- 0.03	+0.03	●	
		GMGW 8030-40R-HR	F	1	8	5.5	4	30	5	- 0.03	+ 0.03	●	

GMGW inserts are exclusively used for KGMW toolholder. It cannot be used for other toolholder because of its different installation angle.
GMGW inserts Edge Preparation : R-honed Cutting Edge.

● : Standard item

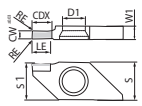
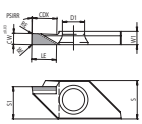
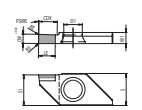
CBN & PCD Inserts are sold in 1 piece boxes

TKF

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

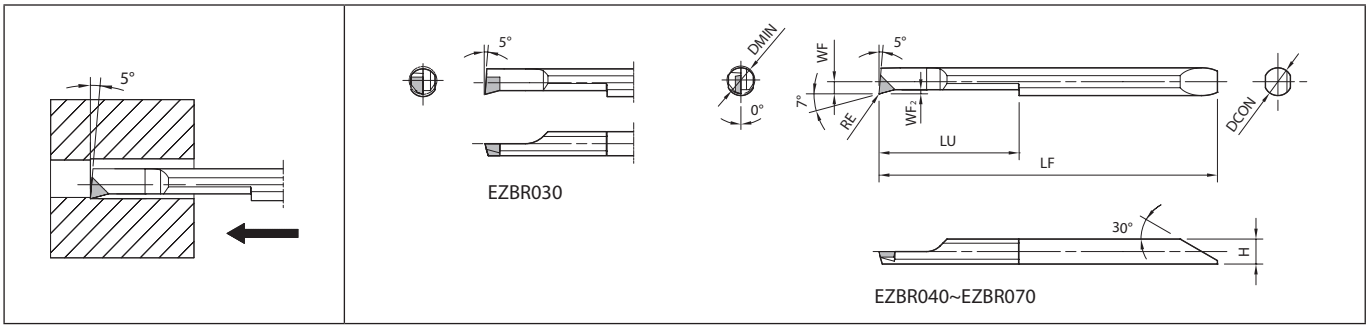
Insert		Description	Edge preparation type	No. of edges	Dimension (mm) CW	CDX	S	S1	D1	RE	LE	W1	Angle (°) PSIR/L	Tolerance (mm) CW min.	CW max.	RE (+/-) min.	RE (+/-) max.	PCD -	PCD KPD001	Applicable toolholder
		TKF12R 200-AGT TKF12R 250-AGT	F	1	2 2.5	4.8	8.7	8.3	5	0.1	4.2	3	0	-0.03	+0.03	-0.05	0	● ●		E15 E16
		TKF12R 200-AS TKF12L 200-AS TKF12R 250-AS	F	1	2 2 2.5	5	8.7	7.3	5	0.1	5.3	3	0	-0.03	+0.03	-0.05	0	● ● ●		
		TKF16R 250-AS TKF16L 250-AS	F	1	2.5	8	9.5	8	5	0.1	6.3	4	0	-0.03	+0.03	-0.05	0	● ●		
		TKF12R 150-NB TKF12R 200-NB TKF12R 250-NB	F	1	1.5 2 2.5	3.5 4 4	8.7	8.3	5	0.1	2 3 3	3	0	-0.03	+0.03	-0.05	0	● ● ●		

Right-hand shown

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

EZB-NB (Boring)



Right-hand shown

Dimensions

How to read pages of "Turning inserts" See page B15

Cutting edge preparation			Non-ferrous metals (with interruption)	●	N
			Non-ferrous metals (without interruption)	●	
PCD all items	F	Sharp edge	Titanium alloys (with interruption)	●	S
			Titanium alloys (without interruption)	●	

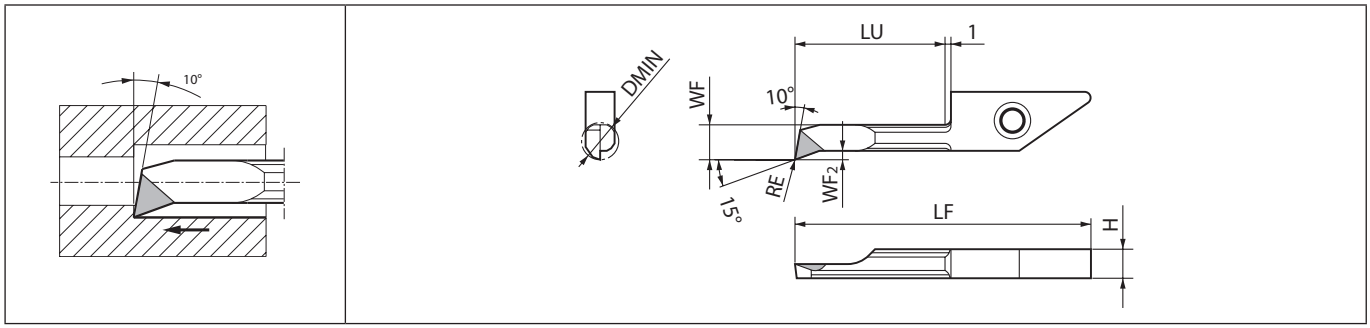
Description	No. of edges	Dimension (mm)								Tolerance (mm)		PCD	Applicable sleeve
		DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	- / KPD001	
EZBR 040040-003NB	1	4	4	3.6	48.8	20	1.75	0.5	0.035	-0.015	+0.015	●	EZH040...
EZBR 050050-003NB	1	5	5	4.6	58.1	25	2.25	0.5	0.035	-0.015	+0.015	●	EZH050...
EZBR 060060-003NB	1	6	6	5.6	66.1	30	2.75	0.5	0.035	-0.015	+0.015	●	EZH060...
EZBR 070070-003NB	1	7	7	6.6	74.1	35	3.25	0.5	0.035	-0.015	+0.015	●	EZH070...

Applicable sleeve: F39 F41 F43

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

VNB-NB (Boring)



Right-hand shown

Dimensions

How to read pages of "Turning inserts" See page B15

Cutting edge preparation		
PCD all items	F	Sharp edge

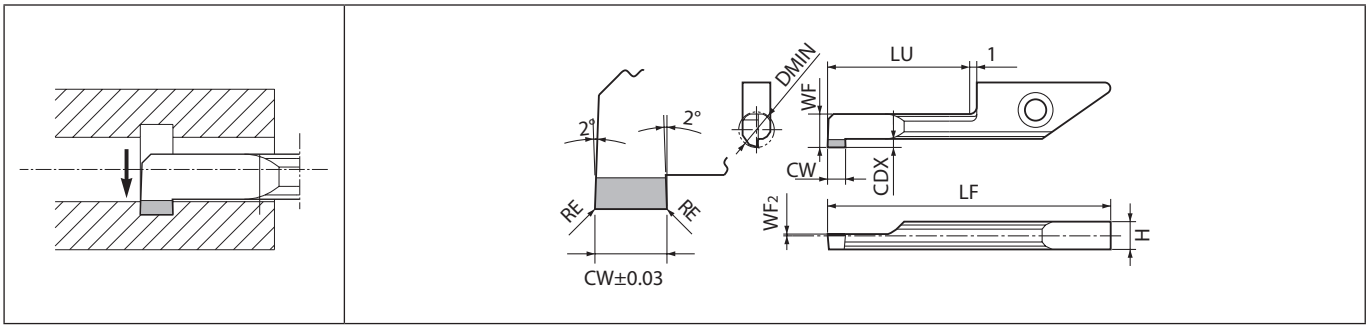
	PCD - KPD001	
Non-ferrous metals (with interruption)	●	N
Non-ferrous metals (without interruption)	●	
Titanium alloys (with interruption)	●	S
Titanium alloys (without interruption)	●	

Description	No. of edges	Dimension (mm) DMIN	H	LF	LU	WF	WF_2	RE	PCD - KPD001	Applicable toolholder
VNBR 0411-02NB	1	4	3.66	30.8	11	3.5	0.5	0.2	●	F48~F51
VNBR 0420-02NB				39.8	20				●	
VNBR 0511-02NB	1	5	3.9	30.8	11	4.5	0.7	0.2	●	
VNBR 0520-02NB				39.8	20				●	
VNBR 0620-02NB	1	6	3.9	39.8	20	5.3	1	0.2	●	
VNBR 0630-02NB				49.8	30				●	
VNBR 0720-02NB	1	7	3.9	39.8	20	6.2	1	0.2	●	
VNBR 0730-02NB				49.8	30				●	

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes

VNG (Internal grooving)



Right-hand shown

Dimensions

How to read pages of "Turning inserts" See page B15

Cutting edge preparation			Non-ferrous metals (with interruption)	●	N
PCD all items	F	Sharp edge	Non-ferrous metals (without interruption)	●	
			Titanium alloys (with interruption)	●	S
			Titanium alloys (without interruption)	●	

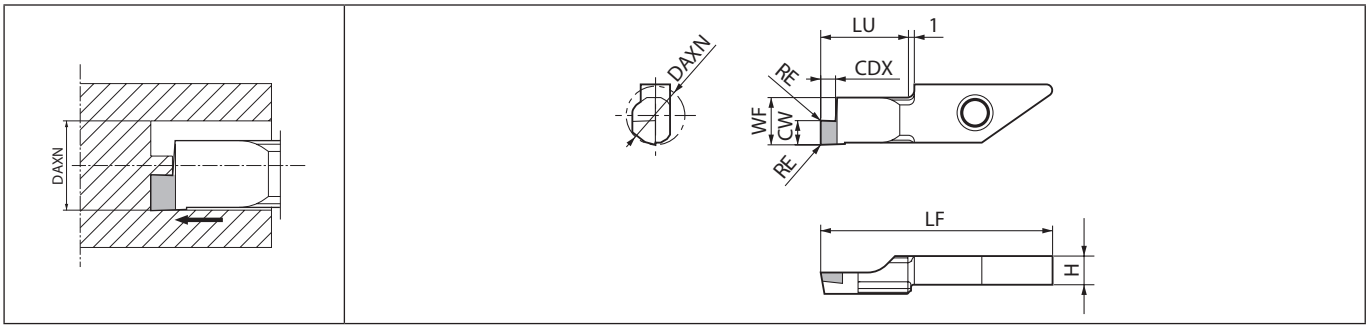
Description	No. of edges	Dimension (mm)									Tolerance (mm)		PCD	Applicable toolholder
		DMIN	CW	CDX	H	LF	LU	WF	WF_2	RE	CW min.	CW max.	- / KPD001	
VNGR 0410-11NB	1	4	1	0.8	3.9	30.8	11	3.5	0.1	0.05	-0.03	+0.03	MTO	F48~F51
VNGR 0420-11NB			2										MTO	
VNGR 0510-11NB	1	5	1	1	3.9	30.8	11	4.4	0.1	0.05	-0.03	+0.03	MTO	
VNGR 0520-11NB			2										MTO	
VNGR 0610-20NB	1	6	1	1.8	3.9	39.8	20	5.2	0.3	0.05	-0.03	+0.03	MTO	
VNGR 0620-20NB			2										MTO	
VNGR 0710-20NB	1	7	1	2	3.9	39.8	20	6.2	0.3	0.05	-0.03	+0.03	MTO	
VNGR 0720-20NB			2										MTO	

CDX shows available grooving depth.

MTO : Made to order

CBN & PCD Inserts are sold in 1 piece boxes

VNFG (Face grooving)



Right-hand shown

Dimensions

How to read pages of "Turning inserts" See page B15

Cutting edge preparation			Non-ferrous metals (with interruption)	●	N
PCD all items	F	Sharp edge	Non-ferrous metals (without interruption)	●	
			Titanium alloys (with interruption)	●	S
			Titanium alloys (without interruption)	●	

Description	No. of edges	External dia. of the groove (mm)		Dimension (mm)							PCD	Applicable toolholder
		DAXN (min.)	DAXX (max.)	CW	CDX	H	LF	LU	WF	RE	- / KPD001	
VNFGR 0820-10NB	1	8 (0)	∞ (∞)	2	2	3.9	29.6	10	7.3	0.05	MTO	F48 F50 F51
VNFGR 0830-10NB	1			3	3	3.9	29.6	10	7.3	0.05	MTO	

CDX shows available grooving depth.
External dia. of the groove DAXN (0) means that you can make the initial groove within DAXN ~ DAXX and then widen it to the center.

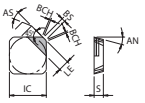
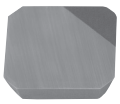
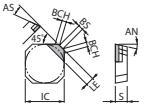
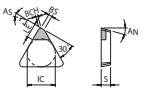
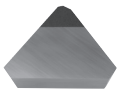
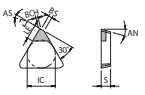
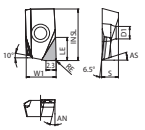
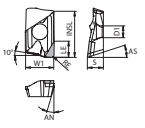
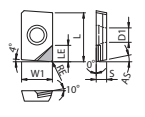
MTO : Made to order

CBN & PCD Inserts are sold in 1 piece boxes

Available inserts

Cutting edge preparation		
PCD all items	F	Sharp edge

Non-ferrous metals (with interruption)	N
Non-ferrous metals (without interruption)	N
Titanium alloys (with interruption)	S
Titanium alloys (without interruption)	S

Insert		Description			No. of edges	Dimension (mm)									Angle (°)		PCD			Applicable toolholder
						IC	S	D1	RE	INSL	LE	BCH	BS	W1	AN	AS	-			
																	KPD001	KPD010	KPD230	
		SDKN	1203AUFN-NE 1203AUFN		1	12.7	3.18	-	-	-	3.1 3.6	0.5	1.2	-	15	23	● ●			-
		SEEN	1203AFFN-NE 1203AFFN		1	12.7	3.18	-	-	-	3 3.5	0.5	1.4	-	20	25	● ●	 ●		-
		TEEN	1603PTFR-NE 1603PTFR		1	9.525	3.18	-	-	-	4.1 4.7	0.6	1.4	-	20	22	● ●	 ●	●	-
		TEKN	2204PTFR-NE 2204PTFR		1	12.7	4.76	-	-	-	4.2 4.8	0.7	1.8	-	20	22	● ●	 ●	●	-
		BDGT	11T302FR 11T304FR 11T308FR		1	-	3.8	2.8	0.2 0.4 0.8	11.5	3.8	-	-	6.7	13	18	● ● ●		● ● ●	M64~M68
		BDGT	11T302FR-LE 11T304FR-LE 11T308FR-LE		1	-	3.8	2.8	0.2 0.4 0.8	11.5	5.2	-	-	6.7	13	18	● ● ●		● ● ●	
		BDMT	11T302FR 11T304FR		1	-	3.8	2.8	0.2 0.4	11	3.6	-	-	6.7	13	18	● ●		● ●	
		BDMT	170402FR 170404FR		1	-	4.9	4.4	0.2 0.4	17	4.4	-	-	9.6	13	18	● ●		● ●	M65~M68
		NDCW	150302FRX-NE		1	-	3.18	4.4	0.2	15	5.1	-	-	9.525	-	15	●		●	M149
		NDCW	150302FRX		1	-	3.18	4.4	0.2	15	5.7	-	-	9.525	-	15	●	●		

Handed insert shows Right-hand

● : Standard item

CBN & PCD Inserts are sold in 1 piece boxes