

CBN & PCD INSERTS



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CBN INSERTS & BARS

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PCD INSERTS & BARS

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MEGACOAT CBN



Innovative CBN Tools

Extended
Tool LifeImproved
StabilityHigh Speed
CuttingFor CBN Variation and Features See Page [A16](#)

Various Insert Edge Preparations Available in High Performance MEGACOAT CBN

Turning Insert Identification System

C N G A 4 3 1 S00525 ME

Refer to [B2](#) for "Turning Indexable Inserts Identification System"

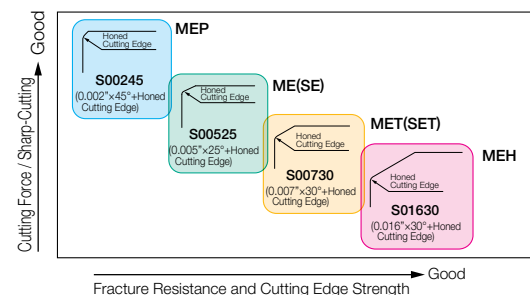
Insert Type	Part Number	Edge Prep.	Manufacturer's Option	Cutting Edge Length	No. of Edges	Re-Grinding
Negative	CNGA431MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CNGA431ME4	S00525	ME4		4 (Double-sided)	
	CNGA431S00525ME		ME		2	
	CNGA431S00245MEP	S00245	MEP		2	
	CNGA431S00525SE	S00525	SE	Long	1	Possible
	CNMN431S00820	S00820	No Indication (Only KBN900)		Multiple Edge	
Positive	CCMW3251MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CCMW3251T00315ME	T00315	ME		2	
	CCMW3251S00525MES	S00525	MES		2	
	CCMW3251T00315SE	T00315	SE		1	

Refer to [Page B3](#) for insert color.

How To Identify Edge Preparation

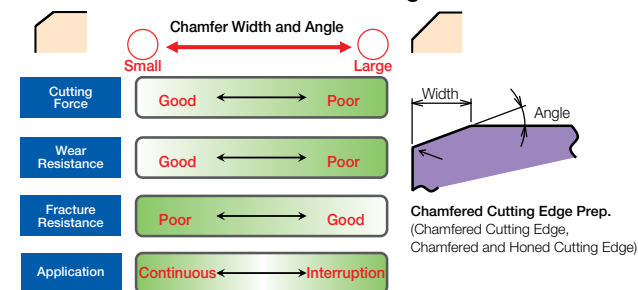
Edge Prep.			
Symbol	Cutting Edge Spec.	Example	Shape
F	Sharp Edge	F	Sharp Edge
E	Honed Cutting Edge	E003	R0.003" Honed Cutting Edge
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered + Honed Cutting Edge

① Standard Cutting Edge Prep. of Negative inserts

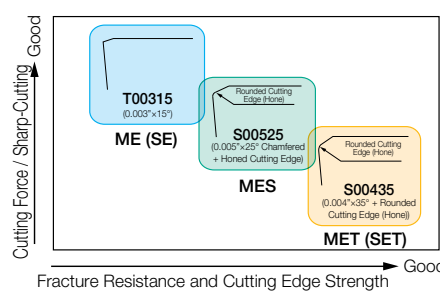


Manufacturer's Option	Cutting Edge Prep.	Application & Features
MEP	S00245 0.002" X 45° + Honed Cutting Edge	High speed, continuous machining Excellent crater wear resistance
ME	S00525 0.005" X 25° + Honed Cutting Edge	General Purpose
MET	S00730 0.007" X 30° + Honed Cutting Edge	Superior fracture resistance
MEH	S01630 0.016" X 30° + Honed Cutting Edge	Interrupted high feed machining Prevention of flaking

Features of Chamfer Width & Angle



② Standard Cutting Edge Prep. of Positive Inserts



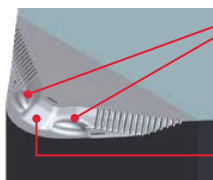
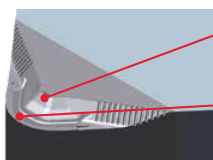
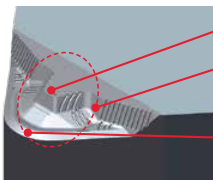
Manufacturer's Option	Cutting Edge Prep.	Application & Features
ME	T00315 0.003" X 15°	Chamfered Sharp cutting oriented, less burring
MES	S00525 0.005" X 25° + Rounded Cutting Edge (Hone)	General Purpose
MET	S00435 0.004" X 35° + Rounded Cutting Edge (Hone)	Interrupted Cutting Stable cutting oriented

H Chipbreaker Series

CBN Inserts for Machining Hardened Material

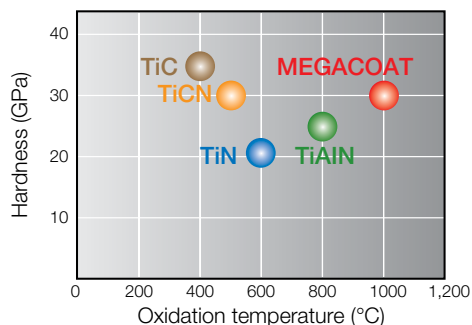
Unique Molded Chipbreaker Provides Excellent Chip Control when Machining Hardened Material

3 Chipbreaker Styles Available for a Wide Range of Machining Applications

Chipbreaker	Application	Recommended Cutting Range
HH 1st Recommendation  <p>Twin Dots Breaks chips into small pieces</p> <p>Wide Bump Provides stable chip curls</p>	Hardened Steel Finishing 55HRC or more	Small D.O.C. (D.O.C. = 0.004" ~ 0.012")
HL  <p>Wide Bump</p> <p>Rake Surface Stable chip control for softer interior of hardened materials</p>	Hardened Steel Finishing 55HRC or less	
HD  <p>Wide Bump</p> <p>Multi-step Structure Good for a wide range of conditions</p> <p>Rake Surface Stable chip control for softer interior of hardened materials</p>	Removing the Carburized Layer (From Carburized Layer to Unhardened Layer)	Large D.O.C. (ap = 0.012" ~ 0.028")

MEGACOAT CBN

PVD Layer Coating Properties

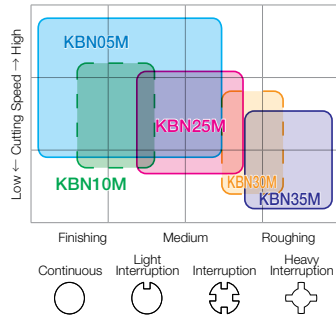


Advantages of MEGACOAT

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

Application Maps

Hardened Materials



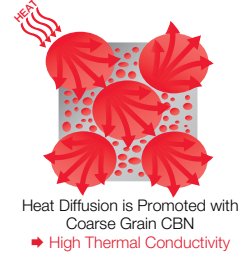
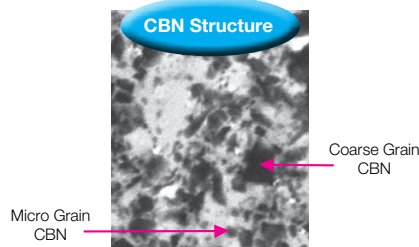
KBN05M

1st recommended grade for a wide range of applications from continuous (high speed finishing) to interrupted cutting.

Hybrid Grain Structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN

► CBN possesses high hardness, toughness, and thermal resistance characteristics.

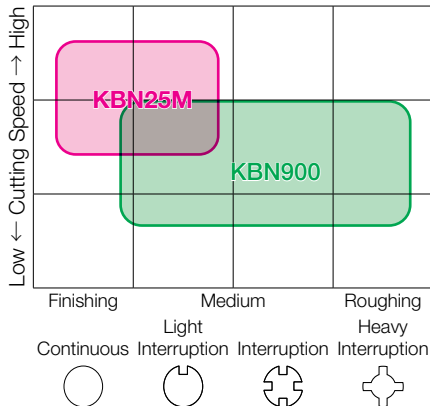


KBN25M: High Stability for General Cutting

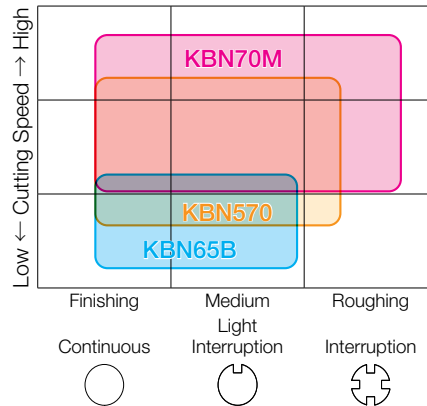
KBN30M: High Stability During Interrupted Cutting

KBN35M: Honeycomb Structure CBN with Superior Fracture Resistance in Heavy Interrupted Cutting

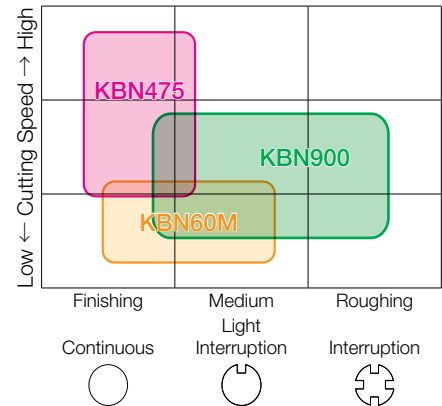
Roll Materials (Chilled Cast Iron)



Powdered Steel



Cast Iron



Recommended Cutting Conditions

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc (sfm)	D.O.C. (in)	f (ipr)
Heat Treated Steel	Over 55HRC	General Finishing	Continuous~Interruption	KBN05M	330 ~ 490 ~ 660	0.002 ~ 0.012 ~ 0.020	0.002 ~ 0.003 ~ 0.004
		Finishing (HH Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ 490 ~ 660	0.004 ~ 0.008 ~ 0.012	0.004 ~ 0.006 ~ 0.010
		High Efficiency Stable Machining	Light Interruption~Interruption	KBN25M	260 ~ 390 ~ 520	0.002 ~ 0.012 ~ 0.020	0.002 ~ 0.003 ~ 0.004
		Interruption (Small D.O.C.)	Interruption~Heavy interruption	KBN35M	200 ~ 330 ~ 490	0.002 ~ 0.008 ~ 0.016	0.002 ~ 0.003 ~ 0.004
		Heavy Machining	Continuous~Interruption	KBN900	230 ~ 300 ~ 360	0.020 ~ 0.039 ~ 0.079	0.002 ~ 0.004 ~ 0.008
	Under 55HRC	Finishing (HL Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ 490 ~ 660	0.004 ~ 0.008 ~ 0.012	0.004 ~ 0.006 ~ 0.010
		Finishing	Continuous	*PT600M	200 ~ 260 ~ 390	0.008 ~ 0.020 ~ 0.028	0.002 ~ 0.004 ~ 0.006
Gray Cast Iron	Under 250HB	Remove Carburized Layer (HD Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ 490 ~ 660	0.012 ~ 0.020 ~ 0.028	0.004 ~ 0.006 ~ 0.010
		Finishing	Continuous~Light interruption	KBN475	1310 ~ 2620 ~ 3940	0.002 ~ 0.008 ~ 0.020	0.004 ~ 0.008 ~ 0.012
		Finishing	Continuous~Light interruption	KBN60M	980 ~ 1640 ~ 2300	0.002 ~ 0.008 ~ 0.020	0.004 ~ 0.008 ~ 0.012
		High Efficiency Finishing	Continuous~Light interruption	KBN900	1640 ~ 2950 ~ 3940	0.004 ~ 0.020 ~ 0.039	0.002 ~ 0.004 ~ 0.008
Roll Materials (Chilled Cast Iron)	Over 55HRC	Heavy Machining	Continuous~Interruption	KBN900	1640 ~ 2300 ~ 2950	0.020 ~ 0.059 ~ 0.118	0.004 ~ 0.012 ~ 0.020
		Finishing	Continuous~Interruption	KBN25M	260 ~ 390 ~ 520	0.002 ~ 0.012 ~ 0.020	0.002 ~ 0.003 ~ 0.004
Sintered Steel	-	Finishing	Continuous~Interruption	KBN900	230 ~ 300 ~ 360	0.012 ~ 0.028 ~ 0.039	0.002 ~ 0.004 ~ 0.006
	-	Finishing	Continuous~Light interruption	KBN570	160 ~ 490 ~ 820	0.002 ~ 0.006 ~ 0.010	0.001 ~ 0.004 ~ 0.008
	-	Finishing	Continuous~Interruption	KBN70M	330 ~ 660 ~ 820	0.002 ~ 0.008 ~ 0.012	0.002 ~ 0.006 ~ 0.010

*PT600M : MEGACOAT on Al₂O₃+TiC Ceramic

Case Studies

5120H (58HRC)	
Gear <ul style="list-style-type: none"> External and Face machining and Chamfering Vc=427 sfm D.O.C.=0.024" f=0.005 ipr WET CNGA432S00525ME (KBN05M) 	
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge
<p>KBN05M achieved 1.5 times longer tool life than competitor C. ➔ Its longer tool life contributes to cost-cutting.</p> <p>User Evaluation</p>	

5120H (58HRC)	
Pulley <ul style="list-style-type: none"> Face machining (Continuous) Vc=394 sfm D.O.C.=0.006"~0.008" f=0.009 ipr WET DNGA432S00245MEP (KBN05M) 	
KBN05M-MEP (Edge Preparation : 0.002"x45°)	150 pcs/edge
KBN05M-ME (Edge Preparation : 0.005"x25°)	100 pcs/edge
Competitor E	100 pcs/edge
<p>Tool life of KBN05M-ME type (Edge prep.: 0.005"x25° Chamfered + R honed) is same as competitor E's. KBN05M-MEP (Edge prep.: 0.0020"x45° Chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear.</p> <div> </div> <p>User Evaluation</p>	

4131 (60HRC)	
Gear Parts <ul style="list-style-type: none"> Face machining (Interrupted) Vc=295 sfm D.O.C.=0.020" f=0.005 ipr WET_DRY CNGA432S00525ME (KBN25M) 	
KBN25M	70 pcs/edge
Competitor G	30 pcs/edge (Unstable)
<p>KBN25M improved tool life up to 70 pieces/edge (two times more than competitor's G CBN tool). Also, KBN25M had increased tool life up to 250 pieces/edge by changing from wet machining to dry machining.</p> <p>User Evaluation</p>	

4131 (55HRC)	
Stator <ul style="list-style-type: none"> Boring Vc=558 sfm D.O.C.=0.016" f=0.004 ipr WET CNGA432S00525ME (KBN05M) 	
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge
<p>KBN05M achieved twice longer tool life than competitor D. ➔ Its longer tool life contributes to cost-cutting.</p> <p>User Evaluation</p>	

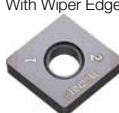
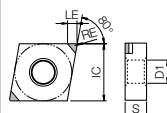

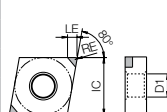
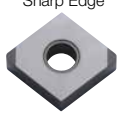
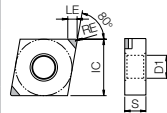

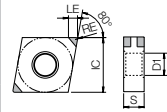

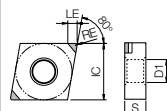
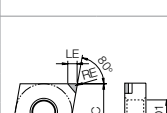

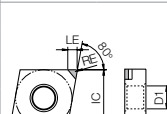

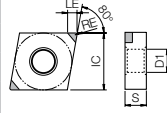
5120 (61~65HRC)	
Gear <ul style="list-style-type: none"> External and Face machining (Interrupted) Vc=394 sfm D.O.C.=0.006" f=0.004~0.006 ipr (External) WET CNGA432S01630MEH (KBN05M) 	
KBN05M-MEH (Edge Preparation : 0.016"x30°)	150 pcs/edge
Competitor F	100 pcs/edge
<p>Compared to competitor. F, KBN05M-MEH type (Edge prep.: 0.016"x30° Chamfered + R-honed) achieved 1.5 times longer tool life. No chipping in interrupted machining, and improved productivity. (Comp. F's cutting edge had multiple chips.) Feed rate could be increased from 0.006 to 0.010 ipr in facing. ➔ Achieved cycle time and cost reduction.</p> <p>User Evaluation</p>	

4131 (58HRC)	
Sleeve <ul style="list-style-type: none"> Internal machining (Heavy interruption) Vc=328sfm D.O.C.=0.020" f=0.004 ipr WET TPGB222S00435MET (KBN35M) 	
KBN35M	115 pcs/edge
Competitor H	100 pcs/edge
<p>KBN35M achieved 15% Longer tool life in heavy interrupted machining compared with competitor H. Furthermore it still keeps the insert in a good condition and so provides stable machining result. ➔ Its longer tool life and capability of providing stable result can contribute to cost-cutting and improved efficiency in machining.</p> <p>User Evaluation</p>	

80° Diamond

Negative Insert with Hole


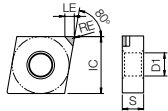

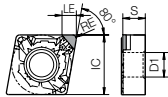

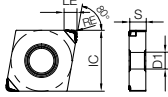

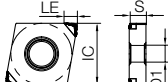


<i>Part Number</i>	IC	S	D1	(in)
CNGA 43_	1/2	3/16	0.203	
CNGM 43_	1/2	3/16	0.203	

Edge Prep.				Gray Cast Iron (with Scale)																				
Symbol	Cutting Edge Spec.	Example		K		Nodular Cast Iron (without Scale)																		
F	Sharp Edge					Nodular Cast Iron (with Scale)																		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed																					
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge	H		Hard Materials (Roughing)																		
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge			Hard Materials (Finishing)																		
						Hard Materials (Chip Control)																		
						Powdered Steel																		
Insert			ANSI Part Number		Edge Prep (in)		ISO Part Number		Dimensions (in)		MEGACOAT CBN										CBN		Toolholder Page	
									RE	LE	No. of Edges	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570			
					CNGA 431S00515MEW 432S00515MEW 433S00515MEW		S00515		CNGA 120404S01215MEW		1/64	0.102	2	●	●									
									120408S01215MEW		1/32	0.098		●	●	●	●							
									120412S01215MEW		3/64	0.098		●	●	●								
					CNGA 431S00245MEP 432S00245MEP 433S00245MEP 434S00245MEP 435S00245MEP 436S00245MEP		S00245		CNGA 120404S00545MEP		1/64	0.102	2	●										
									120408S00545MEP		1/32	0.102		●										
									120412S00545MEP		3/64	0.098		●										
									120416S00545MEP		1/16	0.134		●										
									120420S00545MEP		5/64	0.134		●										
									120424S00545MEP		3/32	0.130		●										
					CNGA 431MEF 432MEF 433MEF		F		CNGA 120404MEF		1/64	0.102	2							●	●			
									120408MEF		1/32	0.102								●	●			
									120412MEF		3/64	0.098								●				
					CNGA 431ME4 432ME4 433ME4		S00525		CNGA 120404ME4		1/64	0.102	4	●										
									120408ME4		1/32	0.102		●										
									120412ME4		3/64	0.098		●										
					CNGA 4305S00525ME 431S00525ME 432S00525ME 433S00525ME 434S00525ME 435S00525ME 436S00525ME		S00525		CNGA 120402S01225ME		0.008	0.102	2	●	●	●								
									120404S01225ME		1/64	0.102		●	●	●	●	●			●			
									120408S01225ME		1/32	0.102		●	●	●	●	●			●			
									120412S01225ME		3/64	0.098		●	●	●	●	●			●			
									120416S01225ME		1/16	0.134		●							●			
									120420S01225ME		5/64	0.134		●							●			
									120424S01225ME		3/32	0.130		●							●			
					CNGA 431T00515ME 432T00515ME 433T00515ME		T00515		CNGA 120404T01215ME		1/64	0.102	2					●		●				
120408T01215ME		1/32							0.102								●	●						
120412T01215ME		3/64							0.098								●	●						
					CNGA 431S00730MET 432S00730MET 433S00730MET 434S00730MET 435S00730MET 436S00730MET		S00730		CNGA 120404S01730MET		1/64	0.102	2	●	●	●								
									120408S01730MET		1/32	0.102		●	△	●	●							
									120412S01730MET		3/64	0.098		●		●	●							
									120416S01730MET		1/16	0.134		●										
									120420S01730MET		5/64	0.134		●										
									120424S01730MET		3/32	0.130		●										
					CNGA 431S01630MEH 432S01630MEH 433S01630MEH 434S01630MEH 435S01630MEH 436S01630MEH		S01630		CNGA 120404S04030MEH		1/64	0.102	2	●										
									120408S04030MEH		1/32	0.102		●										
									120412S04030MEH		3/64	0.098		●										
									120416S04030MEH		1/16	0.134		●										
									120420S04030MEH		5/64	0.134		●										
									120424S04030MEH		3/32	0.130		●										

80° Diamond

Negative Insert with Hole

Part Number	IC	S	D1 (in)
CNGA 43_	1/2	3/16	0.203
CNGM 43_	1/2	3/16	0.203

Edge Prep.			K	Gray Cast Iron (with Scale)																						Toolholder Page
Symbol	Cutting Edge Spec.	Example		Nodular Cast Iron (without Scale)																						
F	Sharp Edge			Nodular Cast Iron (with Scale)																						
E	Rounded Cutting Edge (Hone)	E003		R0.003" Honed	Hard Materials (Roughing)																					
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge <th>H</th> <th colspan="10">Hard Materials (Finishing)</th> <th>●</th> <th>○</th> <th>●</th> <th></th> <th></th> <th></th> <th>○</th> <th>☺</th> <th></th> <th></th>	H	Hard Materials (Finishing)										●	○	●				○	☺				
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge <th colspan="10">Hard Materials (Chip Control)</th> <th>●</th> <th>○</th> <th>●</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Hard Materials (Chip Control)										●	○	●										
			Powdered Steel																							
Insert			ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN											
						RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570								
		CNGA 431S00730SET	S00730	CNGA 120404S01730SET	1/64	0.102	1																			
		CNGM 432S00325BB1	S00325	CNGM 120408S00825BB1	1/32	0.079																				
		433S00325BB1		120412S00825BB1	3/64	0.087																				
		CNGM 431S00525BB2	S00525	CNGM 120404S01225BB2	1/64	0.087	1																			
		432S00525BB2		120408S01225BB2	1/32	0.094																				
		CNGM 431S00625BB3		CNGM 120404S01625BB3	1/64	0.102																				
		432S00625BB3	S00625	120408S01625BB3	1/32	0.110	1																			
433S00625BB3		120412S01625BB3	3/64	0.118																						
		CNGM 431ME-HH		CNGM 120404ME-HH	1/64	0.102																				
		432ME-HH	E	120408ME-HH	1/32	0.102	2																			
		433ME-HH		120412ME-HH	3/64	0.098																				
		CNGM 431ME-HL		CNGM 120404ME-HL	1/64	0.102																				
		432ME-HL	E	120408ME-HL	1/32	0.102	2																			
		433ME-HL		120412ME-HL	3/64	0.098																				
		CNGM 431ME-HD		CNGM 120404ME-HD	1/64	0.102																				
		432ME-HD	S00535	120408ME-HD	1/32	0.102	2																			
		433ME-HD		120412ME-HD	3/64	0.098																				

Negative Insert with Hole


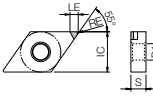

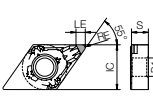
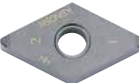
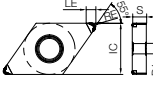
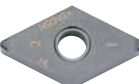
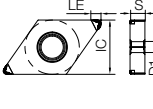
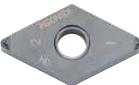
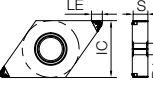
<i>Part Number</i>	IC	S	D1
DNGA 43_	1/2	3/16	0.203
DNGA 44_	1/2	1/4	0.203

C	CBN/PCD INSERTS
CBN	
PCD	
NEGATIVE	
	
	
	
	
	
	
SOLID	
GROOVING	

55° Diamond

Negative Insert with Hole


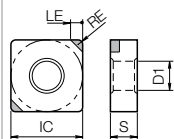

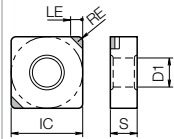

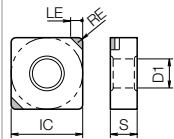

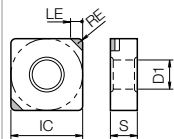

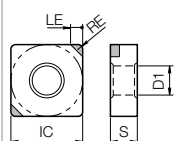

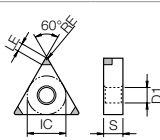

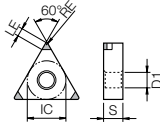

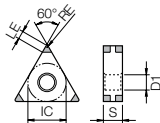
Part Number	IC	S	D1
DNGA 43_	1/2	3/16	0.203
DNGA 44_	1/2	1/4	0.203
DNGM 43_	1/2	3/16	0.203

Edge Prep.			K	Gray Cast Iron (with Scale)																					Toolholder Page
Symbol	Cutting Edge Spec.	Example		Nodular Cast Iron (without Scale)																					
F	Sharp Edge			Nodular Cast Iron (with Scale)																					
E	Rounded Cutting Edge (Hone)	E003 R0.003" Honed		Hard Materials (Roughing)																					
T	Chamfered Cutting Edge	T00515 0.005" X 15° Chamfered Cutting Edge		Hard Materials (Finishing)										●	●					○	☺				
S	Chamfered and Honed Cutting Edge	S00525 0.005" X 25° Chamfered and Honed Cutting Edge	Hard Materials (Chip Control)										●	●											
			Powdered Steel																						
Insert			ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN					CBN					Toolholder Page						
						RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570							
		DNGA 4302S00525SE	S00525	DNGA 150401S01225SE	0.004	0.087	1			△												D12 D13 F88 F94 F95			
		4305S00525SE		150402S01225SE	0.008	0.098				△															
		432S00525SE		150408S01225SE	1/32	0.075				△															
		DNGM 432S00325BB1	S00325	DNGM 150408S00825BB1	1/32	0.062	1			△															
		DNGM 433S00525BB2	S00525	DNGM 150412S01225BB2	3/64	0.083				△															
		DNGM 431ME-HH	E	DNGM 150404ME-HH	1/64	0.102	2	●																	
		432ME-HH		150408ME-HH	1/32	0.087		●																	
		433ME-HH		150412ME-HH	3/64	0.075		●																	
		DNGM 431ME-HL	E	DNGM 150404ME-HL	1/64	0.102	2	●																	
		432ME-HL		150408ME-HL	1/32	0.087		●																	
		433ME-HL		150412ME-HL	3/64	0.075		●																	
		DNGM 431ME-HD	S00535	DNGM 150404ME-HD	1/64	0.102	2	●																	
		432ME-HD		150408ME-HD	1/32	0.087		●																	
		433ME-HD		150412ME-HD	3/64	0.075		●																	

90° Square

Negative Insert with Hole

Part Number	IC	S	D1
SNGA 43_	1/2	3/16	0.203
TNGA 33_	3/8	3/16	0.150

Edge Prep.																		
Symbol	Cutting Edge Spec.		Example	K														
F	Sharp Edge																	
E	Rounded Cutting Edge (Hone)		E003	R0.003" Honed														
T	Chamfered Cutting Edge		T00515	0.005" X 15° Chamfered Cutting Edge	H													
S	Chamfered and Honed Cutting Edge		S00525	0.005" X 25° Chamfered and Honed Cutting Edge														
				Powdered Steel														
Insert				ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN		Toolholder Page
							RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	
		SNGA 432S00245MEP	S00245	SNGA 120408S00545MEP	1/32	0.071	2	●										
		433S00245MEP		120412S00545MEP	3/64	0.087		●										
		SNGA 432MEF	F	SNGA 120408MEF	1/32	0.071	2									●		
		433MEF		120412MEF	3/64	0.087										●		
		SNGA 431S00525ME	S00525	SNGA 120404S01225ME	1/64	0.071	2	●		●								
		432S00525ME		120408S01225ME	1/32	0.071		●		●					●			
		433S00525ME		120412S01225ME	3/64	0.071									●			
				SNGA 432T00515ME	T00515	SNGA 120408T01215ME	1/32	0.071	2									●
		433T00515ME	120412T01215ME	3/64		0.071									●			
		SNGA 431S00730MET	S00730	SNGA 120404S01730MET	1/64	0.071	2	●		△								
		432S00730MET		120408S01730MET	1/32	0.071		●		●	●							
		433S00730MET		120412S01730MET	3/64	0.087		●		●	●							
		SNGA 432S01630MEH	S01630	SNGA 120408S04030MEH	1/32	0.071	2	●										
		433S01630MEH		120412S04030MEH	3/64	0.087		●										
		TNGA 331S00245MEP	S00245	TNGA 160404S00545MEP	1/64	0.106	3	●										
		332S00245MEP		160408S00545MEP	1/32	0.094		●										
		333S00245MEP		160412S00545MEP	3/64	0.083		●										
		TNGA 331MEF	F	TNGA 160404MEF	1/64	0.106	3									●	D16 D17 D18 F88 F98 F99	
		332MEF		160408MEF	1/32	0.094									●			
		333MEF		160412MEF	3/64	0.083										●		
		TNGA 331ME6	S00525	TNGA 160404ME6	1/64	0.106	6	●										
		332ME6		160408ME6	1/32	0.094		●										
		333ME6		160412ME6	3/64	0.083		●										

Negative Insert with Hole

<i>Part Number</i>	IC	S	D1	(in)
TNGA 33_	3/8	3/16	0.150	
TNGM 33_	3/8	3/16	0.150	

D16
D17
D18
F88
F98
F99

**CBN & PCD Inserts
sold in 1 piece boxes.**

35° Diamond

Negative Insert with Hole









Part Number	IC	S	D1
VNGA 33_	3/8	3/16	0.150

Edge Prep.				Gray Cast Iron (with Scale)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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80° Trigon

Negative Insert with Hole

Part Number	IC	S	D1
WNGA 43_	1/2	3/16	0.203


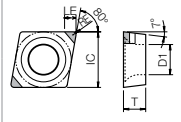

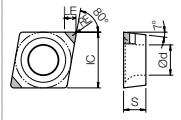

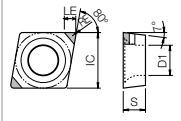

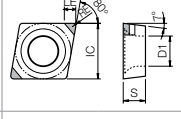

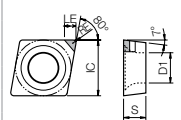

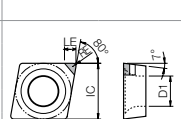

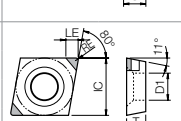

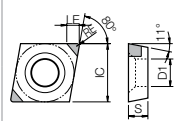

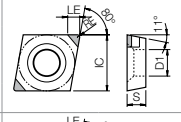

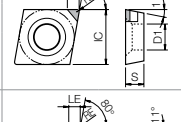




Edge Prep.															Toolholder Page			
Symbol	Cutting Edge Spec.	Example	K	Gray Cast Iron (with Scale)														
F	Sharp Edge			Nodular Cast Iron (without Scale)														
E	Rounded Cutting Edge (Hone)	E003		R0.003" Honed	Nodular Cast Iron (with Scale)													
T	Chamfered Cutting Edge	T00515		0.005" X 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)												
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge	Hard Materials (Finishing)														
				Hard Materials (Chip Control)														
				Powdered Steel														
Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN					CBN			D26 D27 F101 F102		
					RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525		KBN475	KBN570
		WNGA 431MEF	F	WNGA 080404MEF	1/64	0.079	3										●	
		432MEF		080408MEF	1/32	0.102											●	
		WNGA 431S00525ME	S00525	WNGA 080404S01225ME	1/64	0.079	3	●		●	●	●					●	
		432S00525ME		080408S01225ME	1/32	0.102		●		●	△	●					●	
		433S00525ME		080412S01225ME	3/64	0.098		●		●								
		WNGA 431T00515ME	T00515	WNGA 080404T01215ME	1/64	0.079	3										●	
		432T00515ME		080408T01215ME	1/32	0.102						△				●		
		WNGA 431S00730MET	S00730	WNGA 080404S01730MET	1/64	0.079	3			●	●							
		432S00730MET		080408S01730MET	1/32	0.102				●	●							
		433S00730MET		080412S01730MET	3/64	0.098				●								

80° Diamond

Positive Insert with Hole

Part Number	IC	S	D1
CCMW 1109_	0.138	0.055	0.075
1411_	0.169	0.071	0.091
215_	1/4	3/32	0.110
325_	3/8	5/32	0.173


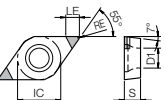

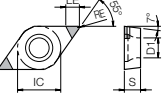

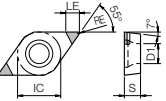

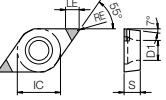

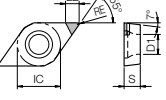

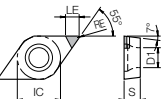
Part Number	IC	S	D1
CPGB 2515_	5/16	3/32	0.138
32_	3/8	1/8	0.177

Edge Prep.																																													
Symbol	Cutting Edge Spec.		Example		K	Gray Cast Iron (with Scale)																																							
F	Sharp Edge					Nodular Cast Iron (without Scale)																																							
E	Rounded Cutting Edge (Hone)		E003	R0.003" Honed		Nodular Cast Iron (with Scale)																																							
T	Chamfered Cutting Edge		T00515	0.005" X 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)																																							
S	Chamfered and Honed Cutting Edge		S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Finishing)																																							
						Hard Materials (Chip Control)																																							
					Powdered Steel																																								
Insert				ANSI Part Number		Edge Prep (in)	ISO Part Number		Dimensions (in)		No. of Edges	MEGACOAT CBN							CBN			Toolholder Page																							
									RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570																								
		CCMW 3251MEF		F	CCMW 09T304MEF		1/64	0.075	2												●	●																							
		3252MEF			09T308MEF		1/32	0.071															●																						
		CCMW 21505T00315ME		T00315	CCMW 060202T00815ME		0.008	0.079	2	●	●	●	●	●			●	●	●																										
		2151T00315ME			060204T00815ME		1/64	0.075		●	●	●	●	●			●	●	●																										
		2152T00315ME		060208T00815ME		1/32	0.071	●	●	●	●	●			●	●	●																												
		CCMW 32505T00315ME		T00315	CCMW 09T302T00815ME		0.008	0.079	2	●	●	●	●	△			●	●	●																										
3251T00315ME		09T304T00815ME			1/64	0.075	●	●		●	●	●	●			●	●	●																											
3252T00315ME			09T308T00815ME		1/32	0.071	●	●	●	●	●	●			●	●	●																												
		CCMW 2151S00525MES		S00525	CCMW 060204S01225MES		1/64	0.075	2	●																																			
		2152S00525MES			060208S01225MES		1/32	0.071		●																																			
		CCMW 3251S00525MES		S00525	CCMW 09T304S01225MES		1/64	0.075	2	●											●																								
		3252S00525MES			09T308S01225MES		1/32	0.071		●												●																							
		CCMW 3251S00435MET		S00435	CCMW 09T304S01035MET		1/64	0.075	2	●	●	●	●							●																									
		3252S00435MET			09T308S01035MET		1/32	0.071		●	●	●	●									●																							
		CCMW 110905T00315SE		T00315	CCMW 030102T00815SE		0.008	0.055	1		●	●					●	●																											
		11091T00315SE			030104T00815SE		1/64	0.055			●	●					●	●																											
		CCMW 141105T00315SE		T00315	CCMW 040102T00815SE		0.008	0.055	1		●	●					●	●																											
		14111T00315SE			040104T00815SE		1/64	0.055			●	●					●	●																											
		CCMW 21505T00315SE		T00315	CCMW 060202T00815SE		0.008	0.079	1			●					●	●																											
		2151T00315SE			060204T00815SE		1/64	0.075				●						●	●																										
		CCMW 32505T00315SE		T00315	CCMW 09T302T00815SE		0.008	0.079	1								●	●																											
		3251T00315SE			09T304T00815SE		1/64	0.075				△						●	●																										
		CCMW 110905S00435SET		S00435	CCMW 030102S01035SET		0.008	0.055	1		●	●								●																									
		11091S00435SET			030104S01035SET		1/64	0.055			●	●							●																										
		CCMW 141105S00435SET		S00435	CCMW 040102S01035SET		0.008	0.055	1		●	●								●																									
		14111S00435SET			040104S01035SET		1/64	0.055			●	●								●																									
		CCMW 2151S00435SET		S00435	CCMW 060204S01035SET	1/64	0.075	1												●																									
		3251S00435SET		S00435	CCMW 09T304S01035SET	1/64	0.075	1												●																									
		CPGB 25151T00315ME		T00315	CPGB 080204T00815ME	1/64	0.075	2	●		●						△	●	●																										
		CPGB 3205T00315ME		T00315	CPGB 090302T00815ME	0.008	0.075	2	●		●						●	●																											
321T00315ME		CPGB 090304T00815ME	1/64		0.075	●			△	●				●	●																														
322T00315ME			CPGB 090308T00815ME	1/32	0.098															●																									
		CPGB 321S00525MES		S00525	CPGB 090304S01225MES		1/64	0.075	2	●																																			
		322S00525MES			090308S01225MES		1/32	0.098		●																																			
		CPGB 25151S00435MET		S00435	CPGB 080204S01035MET		1/64	0.075	2			●								●																									
		25152S00435MET			080208S01035MET		1/32	0.087				●																																	
		CPGB 321S00435MET		S00435	CPGB 090304S01035MET		1/64	0.075	2	●	●	●								●																									
		322S00435MET			090308S01035MET		1/32	0.098		●	●	●	●																																
		CPGB 251505T00315SE		T00315	CPGB 080202T00815SE		0.008	0.075	1									●	●																										
		25151T00315SE			080204T00815SE		1/64	0.075										●	●																										
		CPGB 3205T00315SE		T00315	CPGB 090302T00815SE		0.008	0.075	1										●	●																									
		321T00315SE			090304T00815SE		1/64	0.075										●	●																										
		CPGB 321S00435SET		S00435	CPGB 090304S01035SET	1/64	0.075	1											△																										

55° Diamond

Positive Insert with Hole

Part Number	IC	S	D1
DCMW 215_	1/4	3/32	0.110
325_	3/8	5/32	0.177

Edge Prep.														Toolholder Page						
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (with Scale)								●				●			
F	Sharp Edge			H	Nodular Cast Iron (without Scale)															
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed		Nodular Cast Iron (with Scale)								✚							
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge		Hard Materials (Roughing)					●	○	●				○	☺			
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Chip Control)															
				Powdered Steel													✚			●
Insert				ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN				
							RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	
		DCMW 3251MEF	F	DCMW 11T304MEF	1/64	0.067	2										●	●		
		3252MEF		11T308MEF	1/32	0.075										●	●			
		DCMW 21505T00315ME	T00315	DCMW 070202T00815ME	0.008	0.075	2	●	●	●	●	●		●	●	●				
		2151T00315ME		070204T00815ME	1/64	0.067		2	●	△	●	●	●		●	●	●			
		2152T00315ME		070208T00815ME	1/32	0.075		2	●		●	●			●					
		DCMW 32505T00315ME	T00315	DCMW 11T302T00815ME	0.008	0.075	2	●	●	●	●	●		●	●					
		3251T00315ME		11T304T00815ME	1/64	0.067		2	●	●	●	●	●		●	●				
		3252T00315ME		11T308T00815ME	1/32	0.075		2	●	●	●	●	●		●	●				
3253T00315ME		11T312T00815ME	3/64	0.075	2	●		△												
		DCMW 32505S00525MES	S00525	DCMW 11T302S01225MES	0.008	0.075	2	●												
		3251S00525MES		11T304S01225MES	1/64	0.067		2	●							●				
		3252S00525MES		11T308S01225MES	1/32	0.075		2	●							●				
		DCMW 21505S00435MET	S00435	DCMW 070202S01035MET	0.008	0.075	2			●	●									
		2151S00435MET		070204S01035MET	1/64	0.067		2			●	●								
		2152S00435MET		070208S01035MET	1/32	0.075		2			●									
		DCMW 32505S00435MET	S00435	DCMW 11T302S01035MET	0.008	0.075	2	●		●	●				●					
		3251S00435MET		11T304S01035MET	1/64	0.067		2	●	●	●	●			●					
		3252S00435MET		11T308S01035MET	1/32	0.075		2			●	●				●				
3253S00435MET		11T312S01035MET	3/64	0.075	2			●	●											
		DCMW 21505T00315SE	T00315	DCMW 070202T00815SE	0.008	0.075	1			●			△	●						
		2151T00315SE		070204T00815SE	1/64	0.067		1			●			●	●					
		DCMW 32505T00315SE	T00315	DCMW 11T302T00815SE	0.008	0.075	1						●	●						
		3251T00315SE		11T304T00815SE	1/64	0.067		1						●	●					
3252T00315SE		11T308T00815SE	1/32	0.075	1				△			△								
		DCMW 2151S00435SET	S00435	DCMW 070204S01035SET	1/64	0.067	1							●						
		DCMW 32505S00435SET	S00435	DCMW 11T302S01035SET	0.008	0.075	1							●						
		3251S00435SET		11T304S01035SET	1/64	0.067		1						●						
		3252S00435SET		11T308S01035SET	1/32	0.075	1							△						

Reference Table Below

● CC

Part Number	Applicable Toolholder Page
CC..215_	E24-E26, E45, E52, F29, F47, F49
CC..325_	E24-E26, E45, E52, F47, F89

● DC


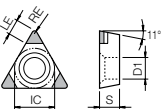

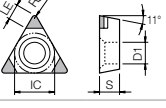

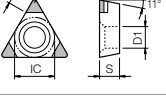
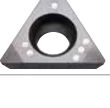
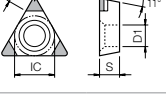

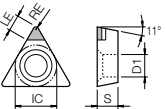

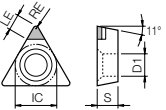

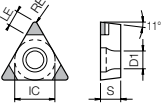

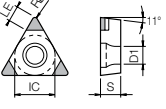

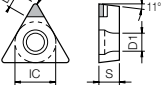
Part Number	Applicable Toolholder Page
DC..215_	E27-E33, E46, E52, F55-F59
DC..325_	E22, E27-E33, E46, E52, F55-F59, F89

60° Triangle

Positive Insert with Hole

Part Number	Applicable Toolholder Page
TP..1515_	E35, F59, F63, F65, F67
TP..1815_	E35, F28, F63, F65, F67
TP..22_	E35, F63, F65, F66
TP..32_	F63, F66

Part Number	IC	S	D1
TPGB 1515_	3/16	3/32	0.098
1815_	7/32	3/32	0.118
22_	1/4	1/8	0.138
32_	3/8	1/8	0.177
TPGW 33_	3/8	3/16	0.173

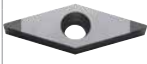
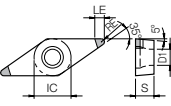

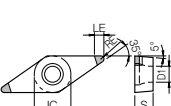

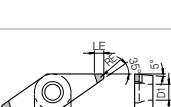

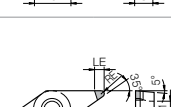

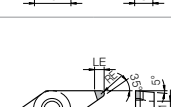

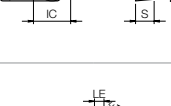

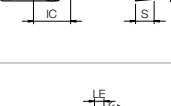

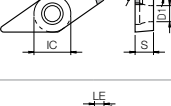

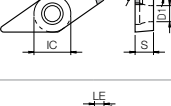

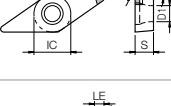
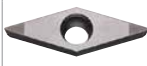
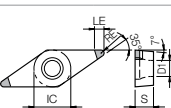

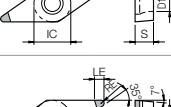

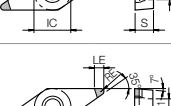

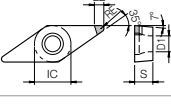
Edge Prep.			Gray Cast Iron (with Scale)																		
Symbol	Cutting Edge Spec.	Example	K		Nodular Cast Iron (without Scale)																
F	Sharp Edge				Nodular Cast Iron (with Scale)																
E	Rounded Cutting Edge (Hone)	E003 R0.003" Honed			Hard Materials (Roughing)																
T	Chamfered Cutting Edge	T00315 0.003" X 15° Chamfered Cutting Edge	H		Hard Materials (Finishing)																
S	Chamfered and Honed Cutting Edge	S00525 0.005" X 25° Chamfered and Honed Cutting Edge			Hard Materials (Chip Control)																
			Powdered Steel																		
Insert			ANSI Part Number		Edge Prep (in)		ISO Part Number		Dimensions (in)		No. of Edges	MEGACOAT CBN							CBN		Toolholder Page
									RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	
 			TPGB 221MEF		F		TPGB 110304MEF		1/64	0.083	3									●	●
			222MEF				110308MEF		1/32	0.071										●	●
 			TPGB 2205T00315ME 221T00315ME 222T00315ME		T00315		TPGB 110302T00815ME 110304T00815ME 110308T00815ME		0.008 1/64 0.083	0.091 0.083	3	●	●	●	●	●		●	●	●	●
			TPGB 321T00315ME 322T00315ME		T00315		TPGB 160304T00815ME 160308T00815ME		1/64 1/32	0.071 0.059	3	●	●	△	●	●			●	●	
 			TPGB 221S00525MES		S00525		TPGB 110304S01225MES		1/64	0.083	3	●								●	
			222S00525MES				110308S01225MES		1/32	0.071		●								●	
 			TPGB 2205S00435MET 221S00435MET 222S00435MET		S00435		TPGB 110302S01035MET 110304S01035MET 110308S01035MET		0.008 1/64 0.083	0.091 0.083	3	●	●	●	△						
			TPGB 321S00435MET 322S00435MET		S00435		TPGB 160304S01035MET 160308S01035MET		1/64 1/32	0.071 0.059	3	●	●	●	●				●	●	
 			TPGB 151505T00315SE 15151T00315SE		T00315		TPGB 080202T00815SE 080204T00815SE		0.008 1/64	0.071 0.062	1		●	●				●	●		
			TPGB 181505T00315SE 18151T00315SE		T00315		TPGB 090202T00815SE 090204T00815SE		0.008 1/64	0.071 0.062	1		●	●				●	●		
			TPGB 2205T00315SE 221T00315SE 222T00315SE		T00315		TPGB 110302T00815SE 110304T00815SE 110308T00815SE		0.008 1/64 1/32	0.075 0.071 0.059	1		●					●	●		
			TPGB 3205T00315SE 321T00315SE		T00315		TPGB 160302T00815SE 160304T00815SE		0.008 1/64	0.075 0.071	1							●	●		
 			TPGB 151505S00435SET 15151S00435SET		S00435		TPGB 080202S01035SET 080204S01035SET		0.008 1/64	0.071 0.062	1		●	●					●		
			TPGB 181505S00435SET 18151S00435SET		S00435		TPGB 090202S01035SET 090204S01035SET		0.008 1/64	0.071 0.062	1		●	●					●		
			TPGB 221S00435SET 222S00435SET		S00435		TPGB 110304S01035SET 110308S01035SET		1/64 1/32	0.071 0.059	1								●		
			TPGB 321S00435SET		S00435		TPGB 160304S01035SET		1/64	0.071	1								●		
 			TPGW 331T00315ME		T00315		TPGW 160404T00815ME		1/64	0.071	3			●							
			332T00315ME				160408T00815ME		1/32	0.059				△							
 			TPGW 331S00435MET		S00435		TPGW 160404S01035MET		1/64	0.071	3			●					△		
			332S00435MET				160408S01035MET		1/32	0.059				●							
 			TPGW 331T00315SE		T00315		TPGW 160404T00815SE		1/64	0.071	1								●		

35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E36-E39, E47, E52, F68-F75
VB..33_	E38-E39, F68-F75

Part Number	IC	S	D1
VBGW 22_	1/4	1/8	0.110
33_	3/8	3/16	0.173
VCGW 1515_	3/16	3/32	0.091

Edge Prep.				Gray Cast Iron (with Scale)																				Toolholder Page	
Symbol	Cutting Edge Spec.		Example	K	Nodular Cast Iron (without Scale)																				
F	Sharp Edge				H	Nodular Cast Iron (with Scale)																			
E	Rounded Cutting Edge (Hone)		E003 R0.003" Honed	H		Hard Materials (Roughing)																			
T	Chamfered Cutting Edge		T00315 0.003" X 15° Chamfered Cutting Edge		H	Hard Materials (Finishing)																			
S	Chamfered and Honed Cutting Edge		S00525 0.005" X 25° Chamfered and Honed Cutting Edge	H		Hard Materials (Chip Control)																			
					Powdered Steel																				
Insert				ANSI Part Number		Edge Prep (in)	ISO Part Number		Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN							
									RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570				
		VBGW 221MEF	F	VBGW 110304MEF	1/64	0.079	2												●	●					
		222MEF		110308MEF	1/32	0.067													●	●					
		VBGW 331MEF		VBGW 160404MEF	1/64	0.079	2													●	●				
		332MEF		160408MEF	1/32	0.067														●	△				
		VBGW 2205T00315ME	T00315	VBGW 110302T00815ME	0.008	0.094	2	●	●	●	△	△				●		●	●						
		221T00315ME		110304T00815ME	1/64	0.079	2	●	●	●	△			●	●	●	●	●	●						
		222T00315ME		110308T00815ME	1/32	0.067		●	●					●	●	●	●	●	●						
		VBGW 3305T00315ME		VBGW 160402T00815ME	0.008	0.094	2	●	●	●	●	●			●	●			●	●					
		VBGW 331T00315ME	T00315	160404T00815ME	1/64	0.079	2	●	●	●	●	●	●	●		●	●	●	●						
		332T00315ME		160408T00815ME	1/32	0.067		●	●	●	●	●	△		●	●	●	●							
		VBGW 221S00525MES		S00525	VBGW 110304S01225MES	1/64	0.079	2	●										●	●					
		222S00525MES			110308S01225MES	1/32	0.067												●	●					
		VBGW 331S00525MES	S00525	VBGW 160404S01225MES	1/64	0.079	2	●										●	●						
		332S00525MES		160408S01225MES	1/32	0.067												●	●						
				VBGW 2205S00435MET	S00435	VBGW 110302S01035MET	0.008	0.094	2	●	●	●	●	△						●	●				
				221S00435MET		110304S01035MET	1/64	0.079	2	●	●	●	●	●					●	●					
222S00435MET	110308S01035MET			1/32		0.067		●	●	●	●	●							●	●					
VBGW 3305S00435MET	VBGW 160402S01035MET			0.008		0.094	2	●	●	●	●	△						●	●						
		VBGW 331S00435MET	S00435	160404S01035MET	1/64	0.079	2	●	●	●	●	●					●	●							
		332S00435MET		160408S01035MET	1/32	0.067		●	●	●	●							●	●						
				VBGW 2205T00315SE	T00315	VBGW 110302T00815SE	0.008	0.110	1	●	●						●	●		●					
				221T00315SE		110304T00815SE	1/64	0.094		●	●							●	●						
				VBGW 3305T00315SE	T00315	VBGW 160402T00815SE	0.008	0.094	1	●							●	●		●					
				331T00315SE		160404T00815SE	1/64	0.079		●	●						●	●							
		332T00315SE	160408T00815SE	1/32	0.067									●	●		●								
				VBGW 221S00435SET	S00435	VBGW 110304S01035SET	1/64	0.079	1										●	●					
222S00435SET	110308S01035SET			1/32		0.067			●								●	●							
				VBGW 331S00435SET	S00435	VBGW 160404S01035SET	1/64	0.079	1										●	●					
				332S00435SET		160408S01035SET	1/32	0.067											●	●					
				VCGW 151505T00315ME	T00315	VCGW 080202T00815ME	0.008	0.079	2	●		●	△				●	●	●						
				15151T00315ME		080204T00815ME	1/64	0.079	2	●		●		●			●	●	●						
15152T00315ME	080208T00815ME			1/32		0.067		●									●								
		VCGW 151505S00435MET	S00435	VCGW 080202S01035MET	0.008	0.079	2			●															
		15151S00435MET		080204S01035MET	1/64	0.079			●																
		15152S00435MET		080208S01035MET	1/32	0.067			●																
		VCGW 151505T00315SE	T00315	VCGW 080202T00815SE	0.008	0.094	1		●	△						●	●								
		15151T00315SE		080204T00815SE	1/64	0.079		●								●	●								
		VCGW 15151S00435SET	S00435	VCGW 080204S01035SET	1/64	0.079	1										●	●							
		15152S00435SET		080208S01035SET	1/32	0.071											●	●							

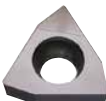
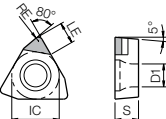
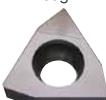
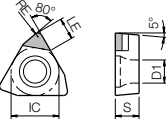
Reference Table Above

E47
F68
F70~F75

80° Trigon

Positive Insert with Hole













Part Number	IC	S	D1
WBGW 121_	5/32	1/16	0.091
1515_	3/16	3/32	0.091

Edge Prep.				K	Gray Cast Iron (with Scale)																					
Symbol	Cutting Edge Spec.	Example			Nodular Cast Iron (without Scale)																					
F	Sharp Edge				Nodular Cast Iron (with Scale)																					
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed		Hard Materials (Roughing)																					
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	H	Hard Materials (Finishing)										●	●					○	☺				
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Chip Control)																					
				Powdered Steel																						
Insert				ANSI Part Number		Edge Prep (in)	ISO Part Number		Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN				Toolholder Page				
									RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570					
		WBGW 12105T00315L-SE	T00315	WBGW 060102T00815L-SE	0.008	0.075	1			●	●					●	●									
		1211T00315L-SE		060104T00815L-SE	1/64	0.075				●	●					●	●									
		WBGW 151505T00315L-SE	T00315	WBGW 080202T00815L-SE	0.008	0.091	1			●	●					△	●									
		15151T00315L-SE		080204T00815L-SE	1/64	0.091				●	●					●	●									
		WBGW 12105S00435L-SET	S00435	WBGW 060102S01035LSET	0.008	0.075	1				●															
		1211S00435L-SET		060104S01035LSET	1/64	0.075					●						●									
		WBGW 151505S00435L-SET	S00435	WBGW 080202S01035LSET	0.008	0.091	1				●															
		15151S00435L-SET		080204S01035LSET	1/64	0.091				●	●						●									

60° Triangle

Positive Insert without Hole

Part Number	IC	S	D1
TBG 121_	5/32	1/16	-
TPG 22_	1/4	1/8	-
TPG 32_	3/8	1/8	-

Edge Prep.				K	Gray Cast Iron (with Scale)																				Toolholder Page
Symbol	Cutting Edge Spec.	Example			Nodular Cast Iron (without Scale)										Nodular Cast Iron (with Scale)										
F	Sharp Edge				Hard Materials (Roughing)																				
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed	H	Hard Materials (Finishing)										●○☺										
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge		Hard Materials (Chip Control)																				
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Powdered Steel										●										
Insert				ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in)		No. of Edges	MEGACOAT CBN						CBN									
							RE	LE		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570						
CBN Surface Type					TBG 12105T00315	T00315	TBGN 060102T00815	0.008	-	3								●						-	
					1211T00315		060104T00815	1/64	-										●	●					
					1212T00315		060108T00815	1/32	-			●							●						
Multi Edge					TPG 2205T00315ME	T00315	TPGN 110302T00815ME	0.008	0.102	3									△						
					221T00315ME		110304T00815ME	1/64	0.098											●					
Small Edge					TPG 221T00315SE	T00315	TPGN 110304T00815SE	1/64	0.098	1									●				F85		
					222T00315SE		110308T00815SE	1/32	0.094											△					
					TPG 3205T00315SE	T00315	TPGN 160302T00815SE	0.008	0.102	1										●	●				
					321T00315SE		160304T00815SE	1/64	0.094											●	●				
					322T00315SE		160308T00815SE	1/32	0.083											●	●				
Small Edge Tough					TPG 221S00435SET	S00435	TPGN 110304S01035SET	1/64	0.098	1									●						
					TPG 321S00435SET	S00435	TPGN 160304S01035SET	1/64	0.094	1									●						

Negative


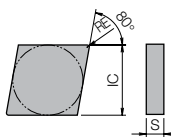

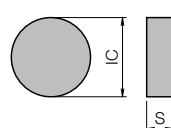

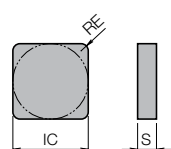

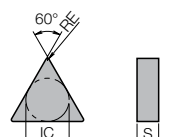
Negative Insert without Hole

(in)

How to read this page **B15**
(in)

Part Number	IC	S
CNM 32_	3/8	1/8
43_	1/2	3/16
RNM 22	1/4	1/8
32	3/8	1/8
42	1/2	1/8
43	1/2	3/16

Part Number	IC	S
SNM 32_	3/8	1/8
42_	1/2	1/8
43_	1/2	3/16
TNM 22_	1/4	1/8
33_	3/8	3/16

Edge Prep.											
Symbol	Cutting Edge Spec.		Example		K	Gray Cast Iron (with Scale)		✖			
F	Sharp Edge					Nodular Cast Iron (without Scale)		✖			
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed			Nodular Cast Iron (with Scale)					
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge								
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		H	Hard Materials (Roughing)		●			
						Hard Materials (Finishing)					
					Hard Materials (Chip Control)						
					Powdered Steel						
Insert			ANSI Part Number		Edge Prep (in)	ISO Part Number	RE	Dimensions (in)	No. of Edges	PVD Coated CBN	Toolholder Page
										KEN900	
		CNM 322	S00820	CNMN 090308S02020	1/32	4	●	D38			
		323		090312S02020	3/64		●				
		CNM 433	S00820	CNMN 120412S02020	3/64	4	●	D32			
		434		120416S02020	1/16		●				
		RNM 22	S00820	RNMN 060300S02020	-	Depends on D.O.C.	●	-			
		RNM 32	S00820	RNMN 090300S02020	-		●				
		RNM 42	S00820	RNMN 120300S02020	-		●	D39			
		43	S00820	RNMN 120400S02020	-		●	D37 D39			
		SNM 322	S00820	SNMN 090308S02020	1/32	8	●	D40 D41			
		323		090312S02020	3/64		●				
		SNM 423	S00820	SNMN 120312S02020	3/64	8	●	D35 D40 D41			
		SNM 432		SNMN 120408S02020	1/32	8	△				
		433		120412S02020	3/64		●				
435		120420S02020	5/64	●							
		TNM 222	S00820	TNMN 110308S02020	1/32	6	●	D42 F104			
		TNM 332	S00820	TNMN 160408S02020	1/32	6	●	D36			
		333		160412S02020	3/64		●				

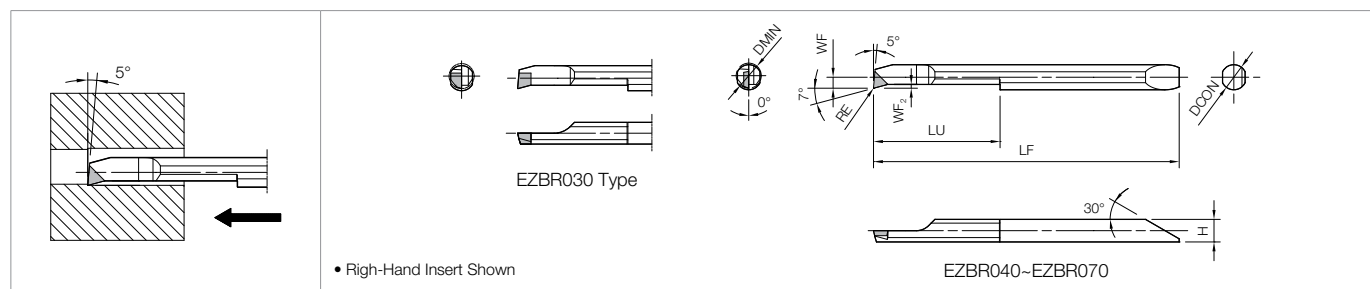
External Grooving Inserts

Grooving Inserts (1-edge)

Edge Prep.																						
Symbol	Cutting Edge Spec.		Example		K	Gray Cast Iron (with Scale)																
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed			Nodular Cast Iron (without Scale)																
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge			Nodular Cast Iron (with Scale)																
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		H	Hard Materials (Roughing)								○	●							
						Hard Materials (Finishing)																
						Hard Materials (Chip Control)																
					Powdered Steel																	
<i>Insert</i> Handed Insert shows Right-hand				<i>ANSI</i> <i>Part Number</i>		<i>ANSI</i> <i>Old Part Number</i>		<i>Edge Prep</i> <i>(in)</i>	CW±0.0012 <i>(in)</i>	Dimensions (mm)						No. of Edges	CBN				Toolholder Page	
										CW±0.003	CDX	RE	IC	S	D1		LE	KBN510		KBN525		
																		R	L	R		L
External Internal Grooving				GBA43 ^{R/L}	125-020	GBA43 ^{R/L}	125	E003	0.049	1.25	2.0	0.2	12.7	4.76	5.5	1.9	1	●		●	●	G12 G13 G80
					150-020		150		0.059	1.50	3.5	0.2	12.7	4.76	5.5	1.9		●	●	●	●	
					200-020		200		0.079	2.00	3.5	0.2	12.7	4.76	5.5	1.9		●	●	●	●	
					300-020		300		0.118	3.00	4.0	0.2	12.7	4.76	5.5	1.9				●		

EZ Bars

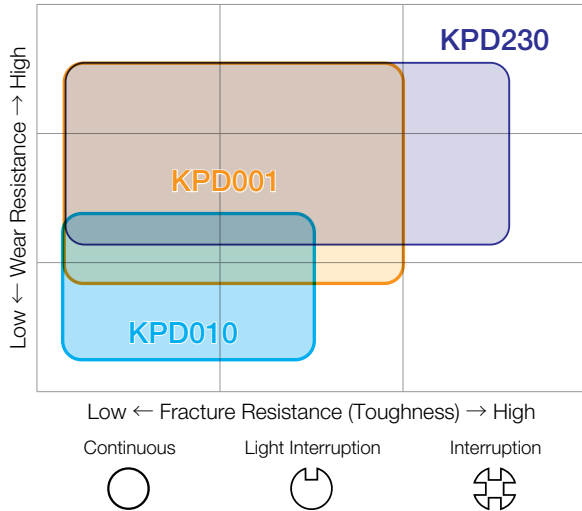
EZB-NB: CBN

How to read this page [B15](#)

EZ Bar Dimensions

Edge Prep.								K	Gray Cast Iron (with Scale)			Applicable Sleeves Page		
Symbol	Cutting Edge Spec.		Example						Nodular Cast Iron (without Scale)					
E	Rounded Cutting Edge (Hone)		E003	R0.003" Honed					Nodular Cast Iron (with Scale)					
T	Chamfered Cutting Edge		T00315	0.003" X 15° Chamfered Cutting Edge					H	Hard Materials (Roughing)				
S	Chamfered and Honed Cutting Edge		S00525	0.005" X 25° Chamfered and Honed Cutting Edge						Hard Materials (Finishing)	●			
			Powdered Steel											
ANSI Part Number		Edge Prep (in)	Min. Bore Dia.	Dimensions (mm)						No. of Edges	MEGA CBN			
			DMIN	DCON	H	LF	LU	WF	WF ₂		RE		KBNO5M	
EZBR	030030-003NB	T00315	3	3	2.6	38.8	13	1.25	0.3	0.035± ^{0.015}	1		●	F32 ~ F37
	040040-003NB	T00315	4	4	3.6	48.8	20	1.75	0.5				●	
	050050-003NB	T00315	5	5	4.6	58.1	25	2.25	0.5			●		
	060060-003NB	T00315	6	6	5.6	66.1	30	2.75	0.5			●		
	070070-003NB	T00315	7	7	6.6	74.1	35	3.25	0.5			●		

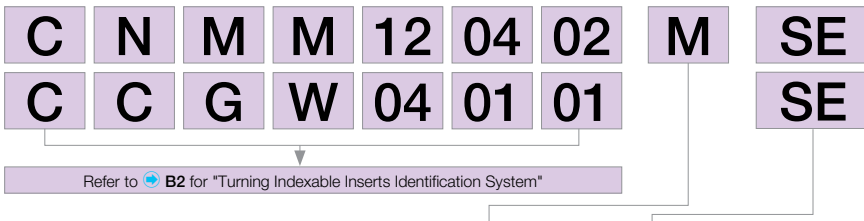
Application Map



About Insert Grades

Grades	Applications	Advantages
KPD001 (Average grain size under 1μm)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of glass fiber and plastics Machining of carbide and ceramics 	<ul style="list-style-type: none"> Smallest micro-grain possible in PCD High edge strength with superior wear resistance, fracture resistance, and edge sharpening performance
KPD010 (Average grain size 10μm)	<ul style="list-style-type: none"> High speed machining of non-ferrous metals and brass High speed machining of glass fiber and plastics Machining of carbide and ceramics 	<ul style="list-style-type: none"> Well balanced wear resistance and flexural strength General Purpose
KPD230 (Mixture of fine grain with average grain size 2-30μm and rough)	<ul style="list-style-type: none"> High speed milling of aluminum alloy and non-ferrous metals such as brass High speed milling of glass fiber and plastics 	<ul style="list-style-type: none"> High density PCD with mixture of both rough and fine grains with excellent abrasive wear and chipping resistance
KPD250 (Average grain size 25μm (Made to order))	<ul style="list-style-type: none"> High speed machining of high silicon aluminium alloy Machining of carbide 	<ul style="list-style-type: none"> Rough grain PCD (Average grain size 25μm) Superior to wear resistance

Turning Insert Identification System



Insert Type	Part Number	Manufacture's Option 1	Manufacture's Option 2	Series Name	Cutting Edge Length	No. of Edges	Regrinding
Negative	CNMM120402M-SE	M (Indicates the insert is for negative toolholders)	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CNMM120402M-NE		NE	New Value Edge	Long (85% length compared to no indication's cutting edge)	1	Possible
	CNMM120402M		No Indication	-	Long	1	
Positive	CCGW040101SE	-	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CCGW040101NE		NE	New Value Edge	Long (85% length compared to no indication's cutting edge)	1	Possible
	CCGW040101		No Indication	-	Long	1	

Note) 1. No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge preparations are sharp edge.
 2. "M" in manufacturer's option 1 indicates the inserts are applicable to negative toolholders.
 3. Refer to [Page B3](#) for insert color.

About Regrinding

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

Recommended Cutting Conditions (Turning)

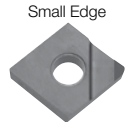
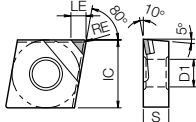

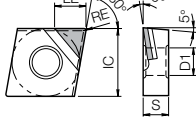
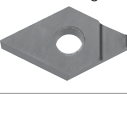
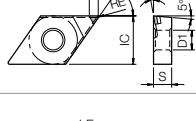
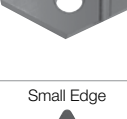
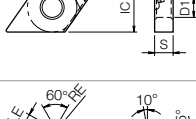
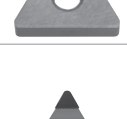
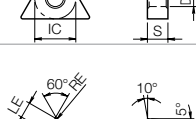

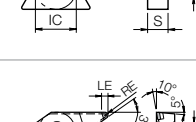

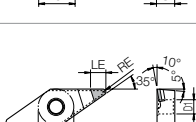

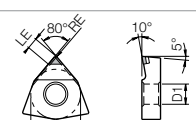

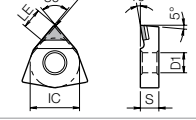
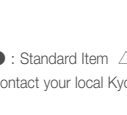
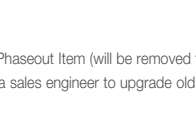
Workpiece Material	Insert Grades		Cutting Conditions				Remarks
	KPD001	KPD010	Cutting Speed (sfm)	D.O.C. (in)		Feed Rate (ipr)	
				Small Edge and Positive Inserts	Negative Inserts		
Aluminum Alloys Zinc Alloys	★	☆	975 - 4925	~0.039	~0.079	0.001 ~0.020	Both Dry and Wet Cutting Available
Copper, Brass, Bronze	★	☆	975 - 3275	~0.039	~0.079	0.001 ~0.020	
Magnesium Alloys	★	☆	1300 - 3925	~0.039	~0.079	0.001 ~0.020	
Carbide	★	☆	25 - 100	~0.012	~0.012	0.001 ~0.004	
Titanium Alloys	★	☆	325 - 650	~0.039	~0.079	0.002 ~0.008	Wet
Glass Fiber Reinforced Plastics Carbon Fiber	★	☆	325 - 1975	~0.039	~0.079	0.002 ~0.020	Dry
Silica Filled Plastic Particle Board	★	☆	1300 - 2625	~0.039	~0.079	0.002 ~0.020	

★: 1st Recommendation ☆: 2nd Recommendation

Negative

Negative Insert with Hole

How to read this page B15

Edge Prep.				N		Non-Ferrous Metals (with Interruption)		●				Toolholder Page	
				S		Non-Ferrous Metals (without Interruption)		●					
All PCD Items						Titanium Alloys (with Interruption)		●					
						Titanium Alloys (without Interruption)		●					
Insert		ANSI Part Number		ISO Part Number		Dimensions (in)					No. of Edges	PCD	
						IC	S	D1	RE	LE		KPD001	KPD010
		CNMM 4305M-SE	CNMM 120402M-SE	1/2	3/16	0.203	0.008	0.110	1	●	●	D8-D9 F87 F91 F92	
		431M-SE	120404M-SE	1/2	3/16	0.203	1/64	0.110		●	●		
		432M-SE	120408M-SE	1/2	3/16	0.203	1/32	0.106		●	●		
		CNMM 4305M-NE	CNMM 120402M-NE	1/2	3/16	0.203	0.008	0.201	1	●	●	D12 D13 F88 F94 F95	
		431M-NE	120404M-NE	1/2	3/16	0.203	1/64	0.197		●	●		
		432M-NE	120408M-NE	1/2	3/16	0.203	1/32	0.193		●	●		
		CNMM 4305M	CNMM 120402M	1/2	3/16	0.203	0.008	0.228	1	●	●		
		431M	120404M	1/2	3/16	0.203	1/64	0.228		●	●		
		432M	120408M	1/2	3/16	0.203	1/32	0.224		●	●		
		433M	120412M	1/2	3/16	0.203	3/64	0.220		●	●		
		DNMM 4305M-SE	DNMM 150402M-SE	1/2	3/16	0.203	0.008	0.110	1	●	●	D16 D17 D18 F88 F98 F99	
		431M-SE	150404M-SE	1/2	3/16	0.203	1/64	0.102		●	●		
		432M-SE	150408M-SE	1/2	3/16	0.203	1/32	0.087		●	●		
		DNMM 4305M-NE	DNMM 150402M-NE	1/2	3/16	0.203	0.008	0.205	1	●	●		
		431M-NE	150404M-NE	1/2	3/16	0.203	1/64	0.197		●	●		
		432M-NE	150408M-NE	1/2	3/16	0.203	1/32	0.181		●	●		
		DNMM 4305M	DNMM 150402M	1/2	3/16	0.203	0.008	0.232	1	●	●		
		431M	150404M	1/2	3/16	0.203	1/64	0.228		●	●		
		432M	150408M	1/2	3/16	0.203	1/32	0.213		●	●		
										●	●		
		TNMM 3305M-SE	TNMM 160402M-SE	3/8	3/16	0.150	0.008	0.106	1	●	●	D20 D21 D22 D24	
		331M-SE	160404M-SE	3/8	3/16	0.150	1/64	0.102		●	●		
		332M-SE	160408M-SE	3/8	3/16	0.150	1/32	0.091		●	●		
		TNMM 3305M-NE	TNMM 160402M-NE	3/8	3/16	0.150	0.008	0.126	1	●	●		
		331M-NE	160404M-NE	3/8	3/16	0.150	1/64	0.122		●	●		
		332M-NE	160408M-NE	3/8	3/16	0.150	1/32	0.110		●	●		
		TNMM 3305M	TNMM 160402M	3/8	3/16	0.150	0.008	0.150	1	●	●		
		331M	160404M	3/8	3/16	0.150	1/64	0.142		●	●		
		332M	160408M	3/8	3/16	0.150	1/32	0.130		●	●		
		333M	160412M	3/8	3/16	0.150	3/64	0.118		●	●		
		VNMM 3305M-SE	VNMM 160402M-SE	3/8	3/16	0.150	0.008	0.114	1	●	●	D26 D27 F101 F102	
		331M-SE	160404M-SE	3/8	3/16	0.150	1/64	0.098		●	●		
		332M-SE	160408M-SE	3/8	3/16	0.150	1/32	0.062		●	●		
		VNMM 3305M-NE	VNMM 160402M-NE	3/8	3/16	0.150	0.008	0.185	1	●	●		
		331M-NE	160404M-NE	3/8	3/16	0.150	1/64	0.165		●	●		
		332M-NE	160408M-NE	3/8	3/16	0.150	1/32	0.134		●	●		
		VNMM 3305M	VNMM 160402M	3/8	3/16	0.150	0.008	0.209	1	●	●		
		331M	160404M	3/8	3/16	0.150	1/64	0.189		●	●		
		332M	160408M	3/8	3/16	0.150	1/32	0.157		●	△		
										●	△		
		WNMM 4305M-SE	WNMM 080402M-SE	1/2	3/16	0.203	0.008	0.110	1	●	△	D26 D27 F101 F102	
		431M-SE	080404M-SE	1/2	3/16	0.203	1/64	0.110		●	●		
		432M-SE	080408M-SE	1/2	3/16	0.203	1/32	0.106		●	●		
		WNMM 4305M-NE	WNMM 080402M-NE	1/2	3/16	0.203	0.008	0.197	1	●	●		
		431M-NE	080404M-NE	1/2	3/16	0.203	1/64	0.197		●	●		
		WNMM 431M	WNMM 080404M	1/2	3/16	0.203	0.008	0.228		1	△		

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts
sold in 1 piece boxes.

KYOCERA

C23

INSERT GRADES A

TURNING INSERTS B

CBN/PCD INSERTS C

TURNING HOLDERS D

SMALL TOOLS E

BORING F

GROOVING G

CUT-OFF H

THREADING J

DRILLING K

MILLING M

QUICK CHANGE TOOLING N

SPARE PARTS P

TECHNICAL R

INDEX T

Positive

Positive Insert with Hole

How to read this page ➡ **B15**

<i>Part Number</i>	<i>Applicable Toolholder Page</i>
CC..215_	<u>E24~E26</u> , <u>E45</u> , <u>E52</u> , <u>F29</u> , <u>F47</u> , <u>F49</u>
CC..325_	E24~E26, E45, E52, F47, F89

Edge Prep.				N	Non-Ferrous Metals (with Interruption)							Toolholder Page		
All PCD Items		Sharp Edge		S	Non-Ferrous Metals (without Interruption)									
				S	Titanium Alloys (with Interruption)									
				Titanium Alloys (without Interruption)										
Insert		ANSI Part Number	ISO Part Number	Dimensions (in)					No. of Edges	PCD				
				IC	S	D1	RE	LE		KPD001	KPD010			
	CCGW	141102SE 141105SE 14111SE	CCGW	040101SE 040102SE 040104SE	0.169	0.071	0.091	0.004 0.008 1/64	0.051 0.051 0.051	1	● ● ●	● ● ●	Reference Table Above	
	CCGW	21502SE 21505SE 2151SE	CCGW	060201SE 060202SE 060204SE	1/4	3/32	0.110	0.004 0.008 1/64	0.091 0.091 0.091	1	● ● ●	● ● ●		
	CCGW	32505SE 3251SE 3252SE	CCGW	09T302SE 09T304SE 09T308SE	3/8	5/32	0.173	0.008 1/64 1/32	0.106 0.106 0.106	1	● ● ●	● ● ●		
	CCGW	141102NE 141105NE 14111NE	CCGW	040101NE 040102NE 040104NE	0.169	0.071	0.091	0.004 0.008 1/64	0.067 0.062 0.062	1	● ● △	● ● ●	Reference Table Above	
	CCGW	21502NE 21505NE 2151NE	CCGW	060201NE 060202NE 060204NE	1/4	3/32	0.110	0.004 0.008 1/64	0.122 0.118 0.118	1	● ● ●	● ● ●		
	CCGW	32502NE 32505NE 3251NE 3252NE	CCGW	09T301NE 09T302NE 09T304NE 09T308NE	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.134 0.134 0.134 0.130	1	● ● ● ●	● ● ● ●		
	CCGW	141102 141105 14111	CCGW	040101 040102 040104	0.169	0.071	0.091	0.004 0.008 1/64	0.075 0.075 0.075	1	● ● ●	● ● ●	Reference Table Above	
	CCGW	21502 21505 2151	CCGW	060201 060202 060204	1/4	3/32	0.110	0.004 0.008 1/64	0.138 0.138 0.138	1	● ● ●	● ● ●		
	CCGW	32502 32505 3251 3252	CCGW	09T301 09T302 09T304 09T308	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.150 0.150 0.146 0.142	1	● ● ● ●	● ● ● ●		
		CCMT	21505SE 2151SE	CCMT	060202SE 060204SE	1/4	3/32	0.110	0.008 1/64	0.087 0.087	1	● ●	● ●	Reference Table Above
		CCMT	32502SE 32505SE 3251SE 3252SE	CCMT	09T301SE 09T302SE 09T304SE 09T308SE	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.106 0.106 0.106 0.106	1	● ● ● ●	● ● ● ●	
		CCMT	21502NE 21505NE 2151NE	CCMT	060201NE 060202NE 060204NE	1/4	3/32	0.110	0.004 0.008 1/64	0.110 0.110 0.110	1	● ● ●	● ● ●	
		CCMT	32502NE 32505NE 3251NE	CCMT	09T301NE 09T302NE 09T304NE	3/8	5/32	0.173	0.004 0.008 1/64	0.134 0.134 0.134	1	● ● ●	● ● ●	Reference Table Above
		CCMT	21502 21505 2151	CCMT	060201 060202 060204	1/4	3/32	0.110	0.004 0.008 1/64	0.130 0.130 0.126	1	● ● ●	● ● ●	
		CCMT	32502 32505 3251 3252	CCMT	09T301 09T302 09T304 09T308	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.154 0.154 0.154 0.150	1	● ● ● ●	● ● ● ●	
		CCMT	32505APD	CCMT	09T302APD				0.008	0.106		●	●	Reference Table Above
			3251APD		09T304APD	3/8	5/32	0.173	1/64	0.106	1	●	●	
			3252APD		09T308APD					1/32	0.106		●	

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215_	<u>E27~E33, E46, E52, F55~F59</u>
DC..325_	<u>E22, E27~E33, E46, E52, F55~F59, F89</u>

A	INSERT GRADES
B	TURNING INSERTS
C	CBN/PCD INSERTS
D	TURNING HOLDERS
E	SMALL TOOLS
F	BOHRING
G	GROOVING
H	CUT-OFF
J	THREADING
K	DRILLING
M	MILLING
N	QUICK CHANGE TOOLING
P	SPARE PARTS
R	TECHNICAL
T	INDEX

C25

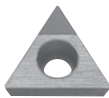
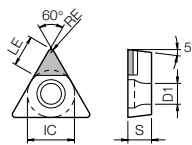
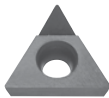
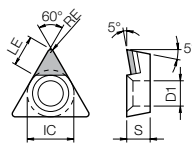
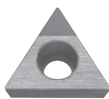
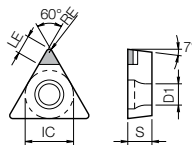
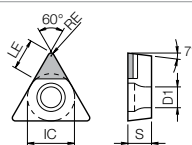
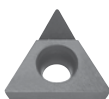
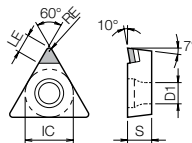
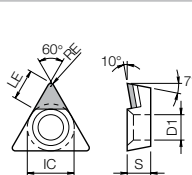

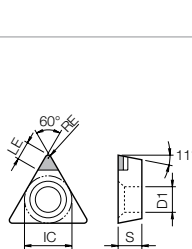
Positive

Positive Insert with Hole

How to read this page ➡ **B15**

<i>Part Number</i>	<i>Applicable Toolholder Page</i>
TP..1815_	E35, F28, F63, F65, F67

Part Number	Applicable Toolholder Page
TP..22_	<u>E33</u> , <u>F61</u> , <u>F63</u> , <u>F64</u>
TP..32	F61, F64

Edge Prep.				N	Non-Ferrous Metals (with Interruption)							Toolholder Page	
				S	Non-Ferrous Metals (without Interruption)								
All PCD Items				S	Titanium Alloys (with Interruption)								
Insert		ANSI Part Number		ISO Part Number		Dimensions (in)					No. of Edges	PCD	
						IC	S	D1	RE	LE		KPD001	KPD010
		TBGW 12105NE	TBGW 060102NE	5/32	1/16	0.091	0.008	0.083	1			F30 F63 F65 F67	
		1211NE	060104NE				1/64	0.075					
		TBGW 12105	TBGW 060102	5/32	1/16	0.091	0.008	0.094	1		△		
1211	060104	1/64	0.087										
		TBMT 12102NE	TBMT 060101NE	5/32	1/16	0.091	0.004	0.087	1			F30 F63 F65 F67	
		1211NE	060104NE				1/64	0.079					
		1212NE	060108NE	1/32	0.067								
TBMT 12105	TBMT 060102	5/32	1/16	0.091	0.008	0.098	1						
1211	060104				1/64	0.091							
1212	060108	1/32	0.079										
		TCGW 2205SE	TCGW 110302SE	1/4	1/8	0.110	0.008	0.098	1			E35	
		221SE	110304SE				1/64	0.094					
		TCGW 2205NE	TCGW 110302NE	1/4	1/8	0.110	0.008	0.130	1				
		221NE	110304NE				1/64	0.126					
	TCGW 2205	TCGW 110302	1/4	1/8	0.110	0.008	0.154	1		△			
			TCMT 2202SE	TCMT 110301SE	1/4	1/8	0.110	0.004	0.102	1			E35
2205SE			110302SE	0.008				0.098					
221SE			110304SE	1/64				0.094					
		TCMT 151505NE	TCMT 080202NE	3/16	3/32	0.091	0.008	0.083	1				
		TCMT 2205NE	TCMT 110302NE	1/4	1/8	0.110	0.008	0.134	1				
		221NE	110304NE				1/64	0.130		△			
		TCMT 151505	TCMT 080202	3/16	3/32	0.091	0.008	0.094	1				
		15151	080204				1/64	0.087					
TCMT 2205	TCMT 110302	1/4	1/8	0.110	0.008	0.154	1		△				
		TPGB 181505SE	TPGB 090202SE	7/32	3/32	0.118	0.008	0.083	1			Reference Table Above	
		18151SE	090204SE				1/64	0.083					
		18152SE	090208SE				1/32	0.083					
	TPGB 2202SE	TPGB 110301SE	1/4	1/8	0.130	0.004	0.106	1					
		2205SE				110302SE	0.008		0.102				
		221SE				110304SE	1/64		0.098				
	TPGB 3205SE	TPGB 160302SE	3/8	1/8	0.177	0.008	0.102	1					
		321SE				160304SE	1/64		0.094				

How to read this page ➡ **B15**

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BOHRING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Positive

Positive Insert with Hole

How to read this page B15

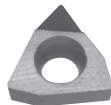
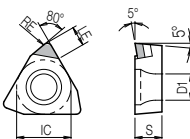
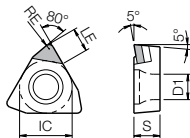
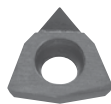
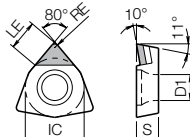

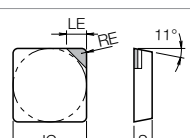

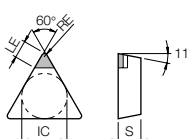
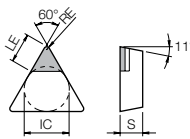
Part Number	Applicable Toolholder Page
VB..22_	E36-E39, E47, E52, F68-F75
VB..33_	E38-E39, F68-F75

Edge Prep.				N		Non-Ferrous Metals (with Interruption)		Non-Ferrous Metals (without Interruption)						
All PCD Items				Sharp Edge				S		Titanium Alloys (with Interruption)		Titanium Alloys (without Interruption)		
Insert		ANSI Part Number		ISO Part Number		Dimensions (in)					No. of Edges		PCD	
						IC	S	D1	RE	LE	KPD001	KPD010		
		VBMT	2202SE	VBMT	110301SE	1/4	1/8	0.110	0.004	0.098	1	●	Reference Table Above	
			2205SE	VBMT	110302SE				0.008	0.091		●		
			221SE	VBMT	110304SE				1/64	0.075		●		
			222SE	VBMT	110308SE				1/32	0.075		●		
		VBMT	3302SE	VBMT	160401SE	3/8	3/16	0.173	0.004	0.106	1	●		
			3305SE	VBMT	160402SE				0.008	0.098		●		
			331SE	VBMT	160404SE				1/64	0.083		●		
			332SE	VBMT	160408SE				1/32	0.079		●		
		VBMT	2202NE	VBMT	110301NE	1/4	1/8	0.110	0.004	0.102	1	●		
			2205NE	VBMT	110302NE				0.008	0.094		●		
			221NE	VBMT	110304NE				1/64	0.079		●		
			222NE	VBMT	110308NE				1/32	0.122		●		
	VBMT		3302NE	VBMT	160401NE	3/8	3/16	0.173	0.004	0.110	1	●		
			3305NE	VBMT	160402NE				0.008	0.102		●		
		VCMT	151505SE	VCMT	080202SE	3/16	3/32	0.091	0.008	0.055	1	●	E47 F68 F70-F75	
			15151SE	VCMT	080204SE				1/64	0.055		●		
			15152SE	VCMT	080208SE				1/32	0.055		●		
			151502NE	VCMT	080201NE				0.004	0.067		●		
			151505NE	VCMT	080202NE				0.008	0.067		●		
			15151NE	VCMT	080204NE				1/64	0.071		●		
		VCMT	15152NE	VCMT	080208NE	1/32	0.075	●						
			151502	VCMT	080201	3/16	3/32	0.091	0.004	0.079	1	●		
			151505	VCMT	080202				0.008	0.079		●		
			15151	VCMT	080204				1/64	0.083		●		
15152			VCMT	080208	1/32				0.087	●				
										●				

Positive

Positive Insert with & without Hole

How to read this page ➡ **B15**

Edge Prep.				N	Non-Ferrous Metals (with Interruption)							Toolholder Page		
				S	Non-Ferrous Metals (without Interruption)									
All PCD Items		Sharp Edge		S	Titanium Alloys (with Interruption)									
				S	Titanium Alloys (without Interruption)									
Insert		ANSI Part Number		ISO Part Number		Dimensions (in)					No. of Edges	PCD		
						IC	S	D1	RE	LE		KPD001	KPD010	
		WBMT 12105L-SE	WBMT 060102L-SE	5/32	1/16	0.091	0.008	0.051	1	●		F31 F77 F78 F79		
		WBMT 151505L-SE	WBMT 080202L-SE	3/16	3/32	0.091	0.008	0.062	1	●				
		WBMT 12102L	WBMT 060101L				0.004	0.075		●				
		12105L	060102L	5/32	1/16	0.091	0.008	0.075	1	●	●			
		1211L	060104L				1/64	0.075		●	●			
		WBMT 151505L	WBMT 080202L	3/16	3/32	0.091	0.008	0.094	1	●	●	F77		
		15151L	080204L				1/64	0.091		●	●			
		WPMT 21505SE	WPMT 110202SE	1/4	3/32	0.110	0.008	0.083	1	●				
			WPMT 21505NE	WPMT 110202NE	1/4	3/32	0.110	0.008	0.106	1	●			F84
			WPMT 21505	WPMT 110202	1/4	3/32	0.110	0.008	0.122	1			●	
		TPG 2202SE	TPGN 110301SE				0.004	0.102		●		F85		
		2205SE	110302SE	1/4	1/8	-	0.008	0.098	1	●	●			
		221SE	110304SE				1/64	0.094		●	●			
		TPG 3202SE	TPGN 160301SE				0.004	0.102			●			
		3205SE	160302SE	3/8	1/8	-	0.008	0.102	1	●	●			
		321SE	160304SE				1/64	0.094		●	●			
		TPG 321NE	TPGN 160304NE	3/8	1/8	-	1/64	0.126		●				
		322NE	160308NE				1/32	0.114		●				
		TPG 2205	TPGN 110302	1/4	1/8	-	0.008	0.154		●	●			
		221	110304				1/64	0.146	1	●	●			
		222	110308				1/32	0.134			△			
		TPG 321	TPGN 160304	3/8	1/8	-	1/64	0.146		●	●			
	322	160308				1/32	0.134			●				

■ Grooving Inserts (1-edge)

[illegible]

Grooving Inserts

How to read this page B15

■ Deep Grooving Inserts (1-edge)

Edge Prep.		N	Non-Ferrous Metals (with Interruption)									
All PCD Items		S	Non-Ferrous Metals (without Interruption)									
			Titanium Alloys (with Interruption)									
			Titanium Alloys (without Interruption)									
Insert		ANSI Part Number	CW ^{#0.0012} (in)	CW ^{#0.03}	RE	INSL	S	LE	No. of Edges	PCD	Toolholder Page	
										KPD001		
External Deep Grooving 		GDGS 2020N-020NB	0.079	2.0	0.2	20	4.3	2.9	1	●	G28 ~ G40	
		3020N-020NB	0.118	3.0								
		4020N-020NB	0.157	4.0								
		5020N-020NB	0.197	5.0								
		6020N-020NB	0.236	6.0								


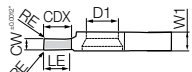


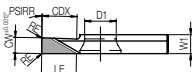


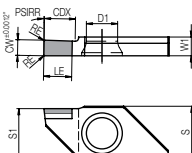
■ For Aluminum Wheel (1-edge)

Edge Prep.		N	Non-Ferrous Metals (with Interruption)									
GMGW		S	Non-Ferrous Metals (without Interruption)									
			Titanium Alloys (with Interruption)									
			Titanium Alloys (without Interruption)									
Insert		ANSI Part Number	CW ^{#0.0012} (in)	CW ^{#0.03}	RE	INSL	S	LE	No. of Edges	PCD	Toolholder Page	
										KPD001		
		GMGW 6030-30R	0.236	6	3	30	5.5	4.5	1	●	G60	
		8030-40R	0.315	8	4	30	5.5	6.0				
		GMGW 8030-40R-HR	0.315	8	4	30	5.5	5.0	1	●		

Grooving / Traversing

1 - Edge

How to read this page B15

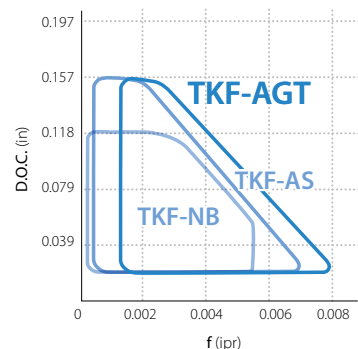
Edge Prep.			N Non-Ferrous Metals (with Interruption) Non-Ferrous Metals (without Interruption)												●				
All PCD Items		Sharp Edge		S Titanium Alloys (with Interruption) Titanium Alloys (without Interruption)												●			
Insert		ANSI Part Number		CW ^{+0.0012} (in)	Dimensions (mm)										Angle (°)	No. of Edges	PCD		Toolholder Page
					CW ^{+0.03}	CDX	RE	W1	S	S1	D1	LE	PSIR [°]	R			L		
 Traversing / Grooving		TKF12R 200-AGT	0.079	2.0	4.8	+0.00 -0.05 0.1	3	8.7	8.3	5	4.2	0°	1	●	●				
		250-AGT	0.098	2.5										●	●				
 Traversing / Grooving		TKF12 [°] L 200-AS	0.079	2.0	5.0	+0.00 -0.05 0.1	3	8.7	7.3	5	5.3	0°	1	●	●	E12 E14			
		TKF16 [°] L 250-AS	0.098	2.5	8		4	9.5	8.0		6.3			●	●				
 External Grooving (Traversing is Possible)		TKF12 [°] L 150-NB	0.059	1.5	3.5	+0.00 -0.05 0.1	3	8.7	8.3	5	2.0	0°	1	●	●				
		200-NB	0.079	2.0	4.0						3.0			●	●				
		250-NB	0.098	2.5	4.0						3.0			●	●				
		250-NB4.5	0.098	2.5	5.0						4.5			△	△				

- Lead angle (front cutting edge angle: **PSIR**(°)) shows the angle when installed into toolholder
- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended.
- Dimension **CDX** shows available grooving depth

◆ Insert Identification System

TKF	12	R	200	-	AS
TKF	12	L	200	-	AS
Insert Type	Insert Size	Insert Hand	Width (Edge Width)	Name of Chipbreaker	
		R : Right-hand		AS : AS Chipbreaker	
		L : Left-hand		NB : Without Chipbreaker	

● Applicable Range



- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended

Note) 1. The cutting edge of the TKF-AS will be 0.04" lower than the center line when attached to the KTKF toolholder (Ref. Fig.1). Adjust the height by making NC lathe parameter settings or inserting a plate.

2. If the 0.04" adjustment is not possible on your automatic lathe, use the TKF-NB (Ref. Fig.2).

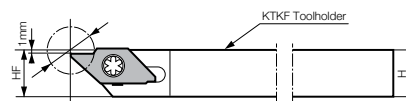


Fig.1 When a TKF-AS/-ASR insert is attached
(The cutting edge is 0.04" lower than the center line.)

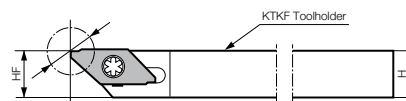
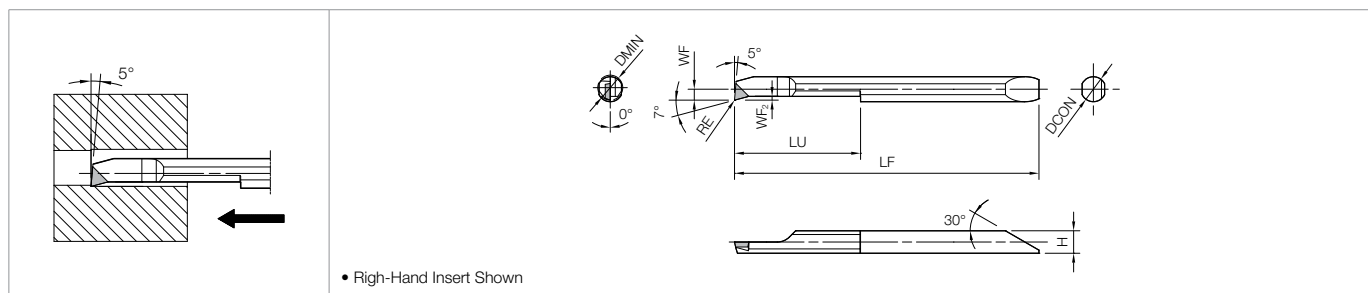


Fig.2 When a TKF-NB insert is attached

EZ Bar

EZB-NB : PCD

How to read this page [B15](#)

EZ Bar Dimensions

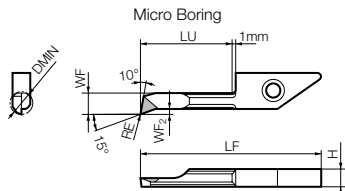
Edge Prep.			N	Non-Ferrous Metals (with Interruption)								Applicable Sleeves Page	
				Non-Ferrous Metals (without Interruption)									
All PCD Items		Sharp Edge		S	Titanium Alloys (with Interruption)								
					Titanium Alloys (without Interruption)								
ANSI Part Number		Min. Bore Dia.	Dimensions (mm)							No. of Edges	PCD		
		DMIN	DCON	H	LF	LU	WF	WF ₂	RE		KPD001		
EZBR	040040-003NB	4	4	3.6	48.8	20	1.75	0.5	0.035 ^{+0.015}	1	●	F32 F37	
	050050-003NB	5	5	4.6	58.1	25	2.25	0.5			●		
	060060-003NB	6	6	5.6	66.1	30	2.75	0.5			●		
	070070-003NB	7	7	6.6	74.1	35	3.25	0.5			●		

System Tip-Bars

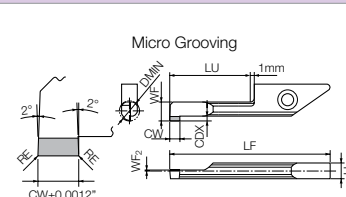
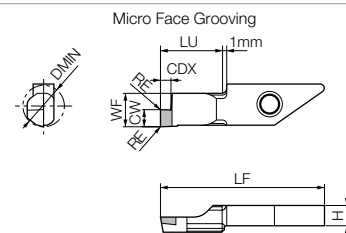
Micro Boring / Micro Grooving

How to read this page B15

System Tip-Bars

Edge Prep.				N		Non-Ferrous Metals (with Interruption)					●		Toolholder Page	
						Non-Ferrous Metals (without Interruption)					●			
All PCD Items				Sharp Edge		S		Titanium Alloys (with Interruption)						●
						Titanium Alloys (without Interruption)					●			
Insert	ANSI Part Number	Min. Bore Dia.	Dimensions (mm)							No. of Edges	PCD			
		DMIN	H	LF	LU	WF	WF ₂	RE	KPD001		KPD010			
	VNBR 0411-02NB	4	3.9	30.8	11	3.5	0.5	0.2	1	●	△	F40 F41		
	0420-02NB			39.8	20					●	△			
	VNBR 0511-02NB	5	3.9	30.8	11	4.5	0.7	0.2	1	●	△			
	0520-02NB			39.8	20					●	△			
	VNBR 0620-02NB	6	3.9	39.8	20	5.3	1.0	0.2	1	●	△			
	0630-02NB			49.8	30					●	△			
	VNBR 0720-02NB	7	3.9	39.8	20	6.2	1.0	0.2	1	●	△			
	0730-02NB			49.8	30					●	△			

System Tip-Bars

Edge Prep.			N Non-Ferrous Metals (with Interruption) Non-Ferrous Metals (without Interruption)												Toolholder Page		
All PCD Items		Sharp Edge		S Titanium Alloys (with Interruption) Titanium Alloys (without Interruption)													
Insert		ANSI Part Number		Min. Bore Dia.	Dimensions (mm)											No. of Edges	PCD
				DMIN DAXN	CW (in)	CW (mm)	RE	H	LF	LU	WF	WF ₂	CDX		KPD001	KPD010	
		VNGR 0410-11NB	4	0.039	1.0	0.05	3.9	30.8	11	3.5	0.1	0.8	1	<input type="checkbox"/>			
		0420-11NB		0.079	2.0	0.10								<input type="checkbox"/>			
		VNGR 0510-11NB	5	0.039	1.0	0.05	3.9	30.8	11	4.4	0.1	1.0	1	<input type="checkbox"/>			
		0520-11NB		0.079	2.0	0.10								<input type="checkbox"/>			
		VNGR 0610-20NB	6	0.039	1.0	0.05	3.9	39.8	20	5.2	0.3	1.8	1	<input type="checkbox"/>	<input type="checkbox"/>		
		0620-20NB		0.079	2.0	0.10								<input type="checkbox"/>	<input type="checkbox"/>		
VNGR 0710-20NB	7	0.039	1.0	0.05	3.9	39.8	20	6.2	0.3	2.0	1	<input type="checkbox"/>	<input type="checkbox"/>				
0720-20NB		0.079	2.0	0.10								<input type="checkbox"/>	<input type="checkbox"/>				
		VNFR 0820-10NB	8	0.079	2.0	0.05	3.9	39.8	10	7.3	-	2.0	1	<input type="checkbox"/>	<input type="checkbox"/>		
		0830-10NB		0.118	3.0									<input type="checkbox"/>	<input type="checkbox"/>		