

CBN and PCD Inserts



CBN Inserts		C2~C32
Negative Turning Inserts	CN Type	C8
	DN Type	C10
	SN Type	C12
	TN Type	C13
	VN Type	C14
	WN Type	C15
	CN Type (Solid)	C16
	RN Type (Solid)	C17
	SN Type (Solid)	C18
	TN Type (Solid)	C19
Positive Turning Inserts	CC Type	C20
	CP Type	C21
	DC Type	C22
	TP Type	C23
	VB Type	C26
	VC Type	C27
	WB Type	C28
Grooving Inserts	GBA	C29
	GDGS	C30
	GMN	C31
Solid Bar	EZB-NB	C32
PCD Inserts		C33~C62
Negative Turning Inserts	CN Type	C34
	DN Type	C35
	TN Type	C36
	VN Type	C37
	WN Type	C38
Positive Turning Inserts	CC Type	C39
	CP Type	C41
	DC Type	C42
	SP Type	C43
	TB Type	C44
	TC Type	C45
	TP Type	C46
	VB Type	C49
	VC Type	C50
	WB / WP Type	C51
Grooving Inserts	GBA	C52
	GV / GV F	C53
	GDGS	C54
	GMN	C55
	GMGW	C56
	TKF	C57
Solid Bar	EZB-NB	C58
	VNBR-NB	C59
	VNGR-NB	C60
	VNFGR-NB	C61

Identification System (CBN Turning Inserts)



Turning Indexable Inserts Identification System™ See B2

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

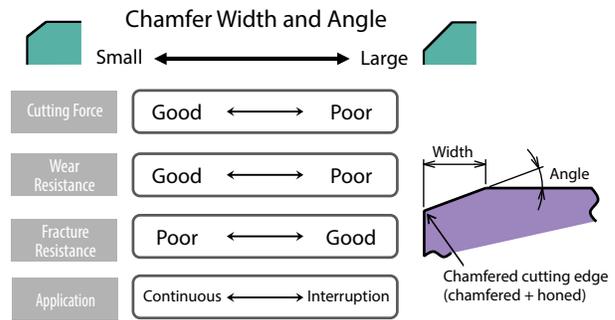
Re-grinding

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

Edge Preparation Identification System

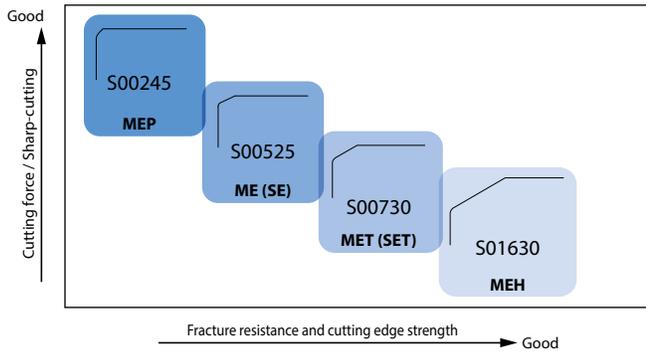
Edge Preparation			
Symbol	Cutting Edge Spec.	Example	Shape
F	Sharp Edge	F Sharp Edge	
E	Honed Cutting Edge	E003 R0.003" Honed Cutting Edge	
T	Chamfered Cutting Edge	T00515 0.005" x 15° Chamfered Cutting Edge	
S	Chamfered and Honed Cutting Edge	S00525 0.005" x 25° Chamfered and Honed Cutting Edge	

Features of Chamfer Width and Angle

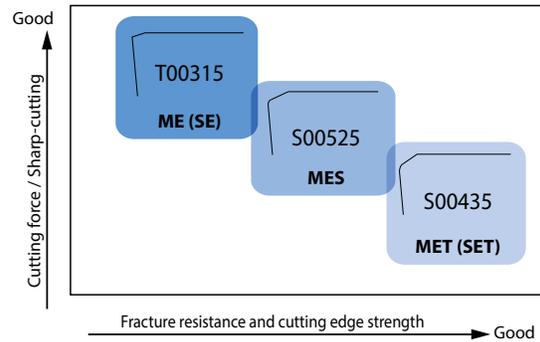


Standard Cutting Edge Preparation

Negative Inserts (Machining of Hard Materials)



Positive Inserts (Machining of Hard Materials)



Manufacturer's Option	Edge Preparation	Application and Features
MEP	S00245 0.002" x 45°+ Honed cutting edge	High speed, continuous cut. 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.

Manufacturer's Option	Edge Preparation	Application and Features
ME	T00315 0.003" x 15°	Chamfered type. Sharp-cutting oriented, less burring.
MES	S00525 0.005" x 25°+ Honed cutting edge	General purpose.
MET	S00435 0.004" x 35°+ Honed cutting edge	Interrupted machining. Stable machining oriented.

CBN Inserts for Machining Hardened Material

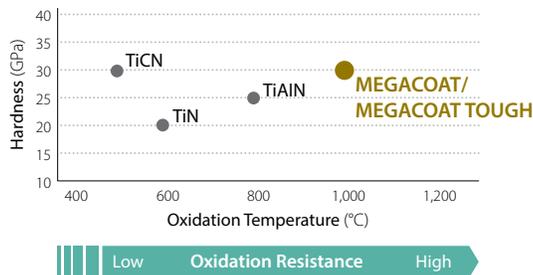
H Chipbreaker Series

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

Chipbreaker	Application	Recommended Cutting Range
<p>HH</p> <p>1st Recommendation</p> <p>Twin Dots Breaks chips into small pieces</p> <p>Wide Bump Provides stable chip curls</p>	<p>Hardened Steel Finishing</p> <p>55HRC or more</p>	<p>Small D.O.C.</p> <p>D.O.C. = 0.004" ~ 0.012"</p>
<p>HL</p> <p>Wide Bump</p> <p>Rake Surface Stable chip control for softer interior of hard materials</p>	<p>Hardened Steel Finishing</p> <p>55HRC or less</p>	
<p>HD</p> <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 hard materials</p>	<p>Removing Carburized Layer</p> <p>From carburized layer to unhardened layer</p>	<p>Large D.O.C.</p> <p>D.O.C. = 0.012" ~ 0.028"</p>

MEGACOAT CBN

Properties of PVD coating



Advantages of MEGACOAT

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

- 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**

Coated CBN for Machining Hardened Material

KBN010 / KBN015 / KBN020

Long tool life and stable machining results with wear resistance and fracture resistance

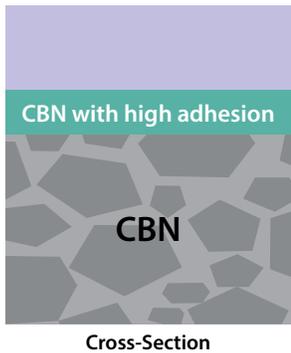
Supports a wide range of applications and reduces the cost of machining hardened materials

C
CBN / PCD
INSERTS
CBN
PCD

1 "MEGACOAT TOUGH" and new CBN provide both wear resistance and fracture resistance

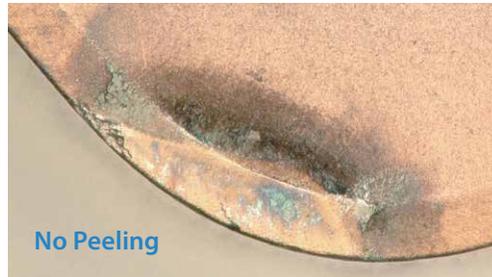


"MEGACOAT TOUGH" coating with newly developed CBN dedicated high adhesion layer
High adhesion suppresses delamination for long tool life and stable machining

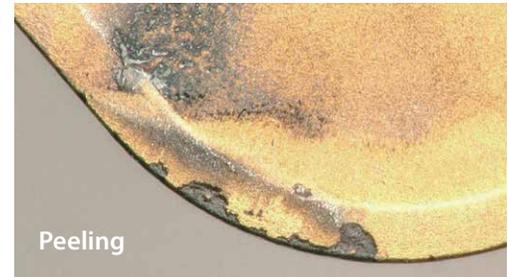


Cutting Edge Condition after Machining (Internal Evaluation)

KBN015



Competitor G



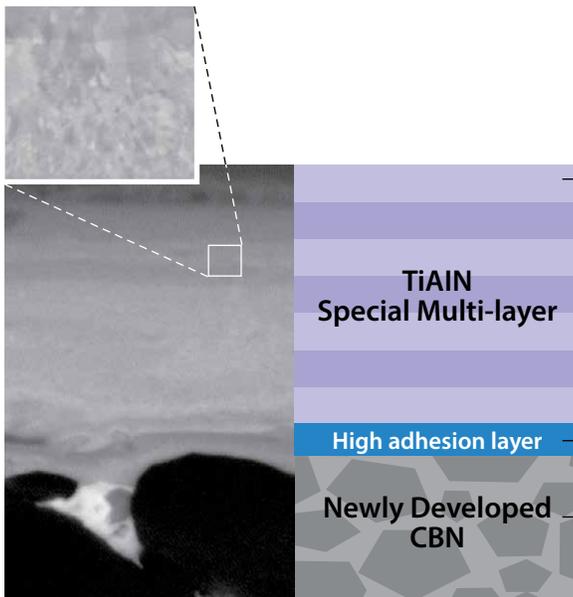
Cutting Conditions : Vc = 490 sfm, D.O.C. = 0.008", f = 0.008 ipr Dry 4118H 61 HRC

Intermediate layer and high adhesion layer for decreased stress improve adhesion with CBN

Medium - High Speed/General Machining **KBN015**

"MEGACOAT TOUGH" and New CBN substrate for Long Tool Life and Stable Machining

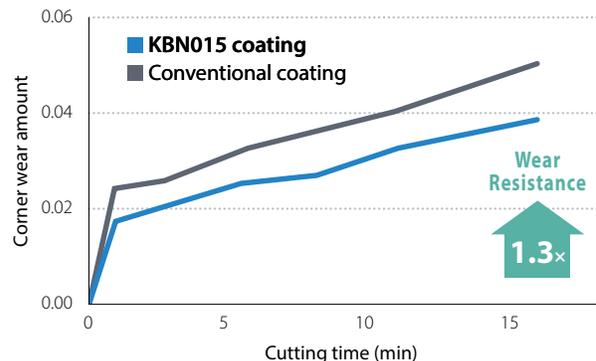
Micronized film structure



Wear Resistance Layer

- Improved heat resistance by optimizing film composition
- Improved hardness and toughness with atomization

Wear resistance comparison (Internal evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.004 ipr D.O.C. = 0.008" Wet 4118H

"MEGACOAT TOUGH" unique technology
Suppresses delamination with high adhesion

Balanced CBN with heat resistance and fracture resistance

- High purity and tough CBN abrasive grain
- Fine ceramic binder improves heat resistance and fracture resistance

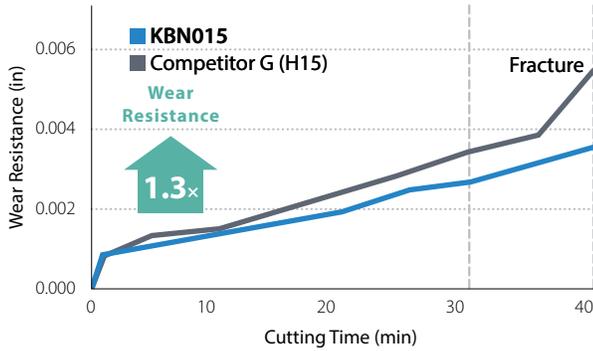
Cutting Performance

Excellent balance of abrasion resistance and fracture resistance, long tool life and stable machining

Medium Speed Machining Evaluation (Vc = 490 sfm)

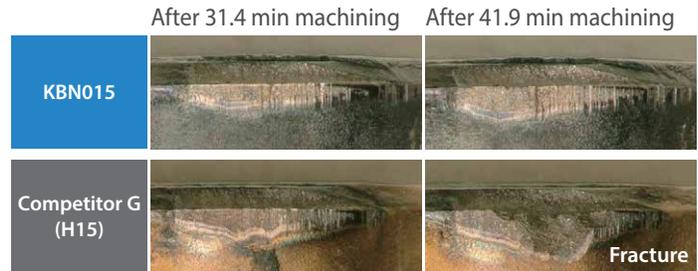
KBN015 has 1.3 times higher wear resistance of competitor G (H15).

Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.004 ipr, D.O.C. = 0.008" ipr Wet 4118H

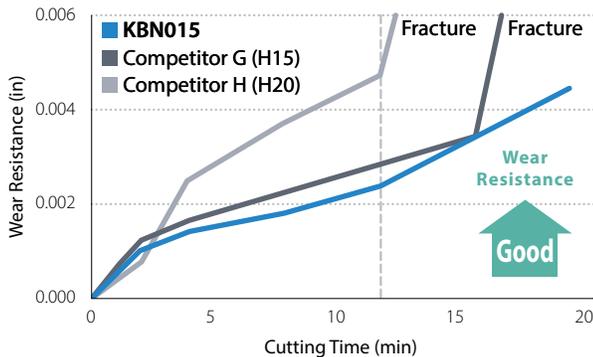
Edge Condition



High Speed Machining Evaluation (Vc = 660 sfm)

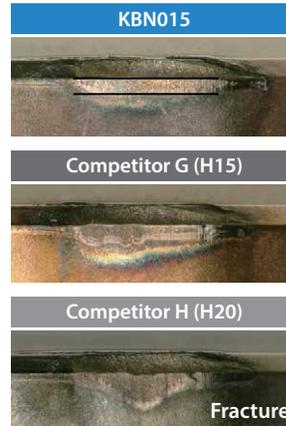
KBN015 has excellent wear resistance and fracture resistance compared to competitor's H15 and H20 grades.

Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.004 ipr, D.O.C. = 0.008" Wet 4118H

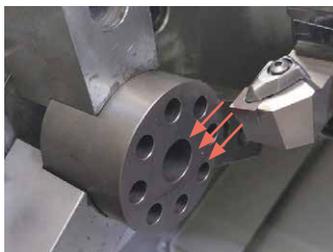
Edge condition (after 11.5 min machining)



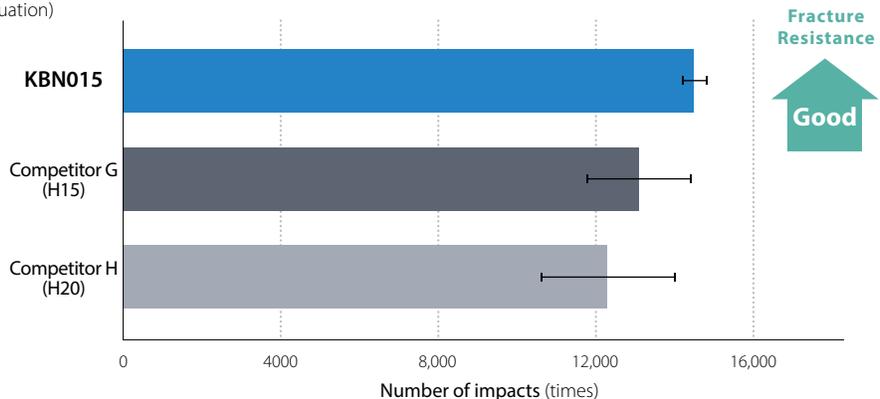
Interrupted Machining Evaluation

KBN015 is resistant to chipping and has high stability compared to competitor's H15 and H20 grades.

Fracture Resistance Comparison (Internal Evaluation)



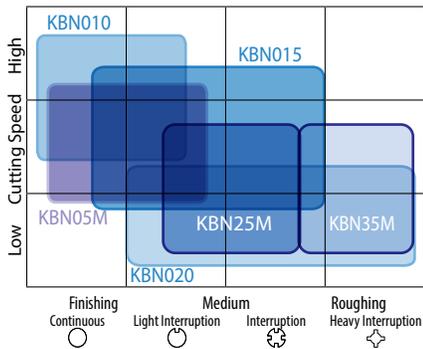
Cutting Conditions : Vc = 490 sfm
f = 0.008 ipr, D.O.C. = 0.008" Dry
4118H



- INSERT GRADES **A**
- TURNING INSERTS **B**
- CBN/PCD INSERTS **C**
- TURNING HOLDERS **D**
- SMALL TOOLS **E**
- BORING **F**
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Application Maps

Hard Materials



KBN010 : For high speed finishing.
KBN015 : 1st recommended grade for a wide range of application from continuous to interrupted machining.
KBN020 : For heavily interrupted machining.
KBN05M : Applicable for continuous (high speed finishing) to interrupted machining. Inserts with chipbreakers are available.
KBN25M : High stability for general machining.
KBN35M : Honeycomb structure CBN (Superior fracture resistance in heavy interrupted machining).

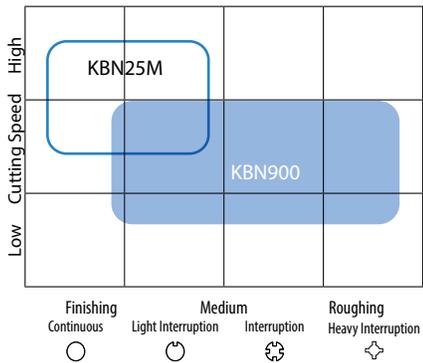
KBN010/KBN015/KBN020 Coolant Recommendation

✓ Recommended ✗ Not Recommended

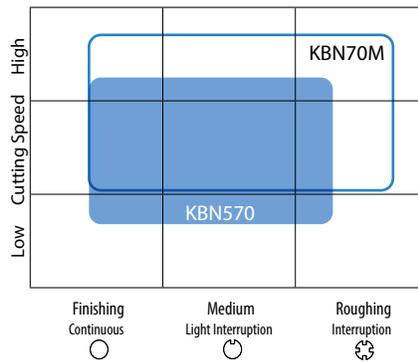
Application	Wet	Dry
Continuous	✓	✗
Interruption	Partially*	✓

*If running coolant in interrupted material, use **KBN05M**

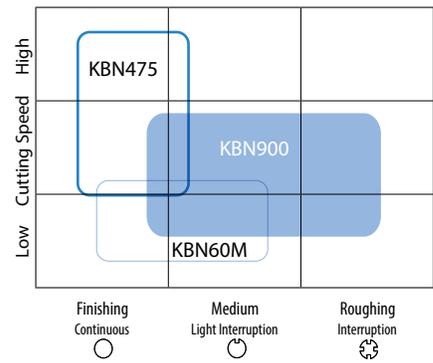
Roll Materials (Chilled Cast Iron)



Sintered Steel



Cast Iron



Recommended Cutting Conditions

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc : (sfm)	D.O.C. : (in)	f : (ipr)
Hardened Steel	Over 55HRC	High precision, High speed finishing	Continuous	KBN010	260 - 590 - 820	0.002 - 0.008 - 0.014	0.002 - 0.006 - 0.012
		High speed / General machining	Continuous ~ Interruption	KBN015	260 - 590 - 750	0.002 - 0.008 - 0.020	0.002 - 0.008 - 0.018
		Low speed / General machining	Continuous ~ Heavy interruption	KBN020	260 - 390 - 660	0.002 - 0.008 - 0.020	0.002 - 0.008 - 0.018
		HH chipbreaker for hardened steel finishing	Continuous ~ Interruption	KBN05M	330 - 490 - 660	0.004 - 0.008 - 0.012	0.004 - 0.006 - 0.010
		High efficient stable machining	Light interruption ~ Interruption	KBN020	260 - 490 - 660	0.002 - 0.008 - 0.020	0.002 - 0.008 - 0.018
		Interruption (Small ap)	Interruption ~ Heavy interruption	KBN020	260 - 430 - 590	0.002 - 0.008 - 0.020	0.002 - 0.008 - 0.016
	Heavy machining	Continuous ~ Interruption	KBN900	230 - 300 - 360	0.020 - 0.039 - 0.079	0.002 - 0.004 - 0.008	
	Under 55HRC	HL chipbreaker for hardened steel finishing	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	Removing the carburized layer	HD chipbreaker	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 efficient 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	-	Heavy machining	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)	
<ul style="list-style-type: none"> • Gear • External , facing & chamfering • Vc = 430 sfm • D.O.C. = 0.024" • f = 0.005 ipr • Wet • CNGA432S00525ME (KBN05M) 	
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge
<ul style="list-style-type: none"> • KBN05M achieved 1.5 times longer tool life than competitor C. • Its longer tool life contributes to cost-cutting. 	
User Evaluation	

4131 (55HRC)	
<ul style="list-style-type: none"> • Stator • Boring • Vc = 560 sfm • D.O.C. = 0.016" • f = 0.004 ipr • Wet • CNGA432S00525ME (KBN05M) 	
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge
<ul style="list-style-type: none"> • KBN05M achieved twice longer tool life than competitor D. • Its longer tool life contributes to cost-cutting. 	
User Evaluation	

5120 (58HRC)	
<ul style="list-style-type: none"> • Pulley • Facing (Continuous) • Vc = 390 sfm • D.O.C. = 0.006" ~ 0.008" • f = 0.009 ipr • Wet • DNGA432S00245MEP (KBN05M) 	
KBN05M-MEP (Edge preparation: 0.002" x 45°)	150 pcs/edge
KBN05M-ME (Edge preparation: 0.005" x 25°)	100 pcs/edge
Competitor E	100 pcs/edge
<ul style="list-style-type: none"> • Tool life of KBN05M-ME type (Edge prep.: 0.005" x 25° chamfered + R honed) is same as comp. E's. • KBN05M-MEP (Edge prep.: 0.002" x 45° chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear. 	
User Evaluation	

5120 (61~65HRC)	
<ul style="list-style-type: none"> • Gear • External & facing (Interrupted) • Vc = 390 sfm • D.O.C. = 0.006" • f = 0.004 ~ 0.006 ipr (External) • Wet • CNGA432S01630MEH (KBN05M) 	
KBN05M-MEH (Edge preparation: 0.016" x 30°)	150 pcs/edge
Competitor F	100 pcs/edge
<ul style="list-style-type: none"> • Compared to competitor F, KBN05M-MEH type (Edge prep.: 0.016" x 30° chamfered + R honed) achieved 1.5 times longer tool life. • No chipping in interrupted machining, and improved productivity. Competitor F's cutting edge had significant chipping. • Feed rate could be increased from 0.006 to 0.010 ipr when facing. • Achieved cycle time and cost reduction. 	
User Evaluation	

4140 Hardened Steel (55 ~ 62HRC)	
<ul style="list-style-type: none"> • Pinion • Vc = 430 sfm • D.O.C. = 0.002" • f = 0.003 ipr • Dry • CNGM432ME-HH (KBN05M) 	
KBN05M HH Chipbreaker	70 pcs/edge
Competitor G	30 pcs/edge
<p>The HH chipbreaker maintained 2.3 times longer tool life than Competitor F. The molded chipbreaker provided stable chip control.</p>	
User Evaluation	

5120H (59HRC)	
<ul style="list-style-type: none"> • Clutch • Vc = 330 sfm • D.O.C. = 0.006" • f = 0.004 ipr • Wet • WNGA432S00525ME (KBN020) 	
KBN020	650 pcs/edge
Competitor H	400 pcs/edge
<p>KBN020 can be stable machining and long tool life.</p>	
User Evaluation	

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

80° Diamond

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)		Gray Cast Iron (without Scale)		Nodular Cast Iron (with Scale)		Hard Materials (Roughing)		Hard Materials (Finishing)		Hard Materials (Chip Control)		Powdered Steel		K
				Symbol	Specification	F	Example	Sharp Edge		R0.003" Honed		0.005" × 15° Chamfered		0.005" × 25° Chamfered and R-Honed				
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					CBN	Applicable Toolholder Page						
						IC	S	D1	RE	LE			KBN05M	PVD				
		E	CNGM 431ME-HH	CNGM 120404ME-HH	E	2	1/2	3/16	0.203	1/32	0.102	●	D8~D11 F138 F147 F148					
			432ME-HH	120408ME-HH														
			433ME-HH	120412ME-HH														
		E	CNGM 431ME-HL	CNGM 120404ME-HL	E	2	1/2	3/16	0.203	1/32	0.102	●	D8~D11 F138 F147 F148					
			432ME-HL	120408ME-HL														
			433ME-HL	120412ME-HL														
		S00535	CNGM 431ME-HD	CNGM 120404ME-HD	S01235	2	1/2	3/16	0.203	1/32	0.102	●	D8~D11 F138 F147 F148					
			432ME-HD	120408ME-HD														
			433ME-HD	120412ME-HD														

INSERT GRADES	A
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THREADING	J
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MILLING	M
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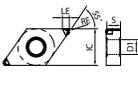
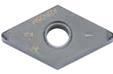
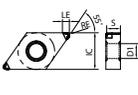
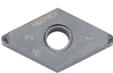
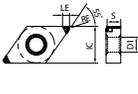
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts
 sold in 1 piece boxes

55° Diamond

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)		Gray Cast Iron (without Scale)		Nodular Cast Iron (with Scale)		Hard Materials (Roughing)		Hard Materials (Finishing)		Hard Materials (Chip Control)		Powdered Steel	
Symbol	Specification	Example															
F	Sharp Edge	F	Sharp Edge														
E	R-Honed	E003	R0.003" Honed														
T	Chamfered	T00515	0.005" × 15° Chamfered														
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed														

Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					CBN		Applicable Toolholder Page			
						IC	S	D1	RE	LE	PVD	KBN05M				
  Hardened Steel Finishing (55HRC or more)	DNGM 431ME-HH	E	DNGM 150404ME-HH	E	2	1/2	3/16	0.203	1/32	0.087	●	●	D14~D19 F140, F152 F154~F156			
	432ME-HH		150408ME-HH											3/64	0.075	●
	433ME-HH		150412ME-HH													
  Hardened Steel Finishing (55HRC or less)	DNGM 431ME-HL	E	DNGM 150404ME-HL	E	2	1/2	3/16	0.203	1/32	0.087	●	●				
	432ME-HL		150408ME-HL											3/64	0.075	●
	433ME-HL		150412ME-HL													
  Removing the Carburized Layer Large D.O.C.	DNGM 431ME-HD	S00535	DNGM 150404ME-HD	S01235	2	1/2	3/16	0.203	1/32	0.087	●	●				
	432ME-HD		150408ME-HD											3/64	0.075	●
	433ME-HD		150412ME-HD													

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

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

CBN and PCD Inserts sold in 1 piece boxes

60° Triangle

How to read this page See page B15

Cutting Edge Preparation				Material Compatibility														Applicable Toolholder Page				
Symbol	Specification	Example																				
F	Sharp Edge	F																K				
E	R-Honed	E003																				
T	Chamfered	T00515																				
S	Chamfered and R-Honed	S00525																				
				Gray Cast Iron (with Scale)						Gray Cast Iron (without Scale)						Hard Materials (Roughing)		Hard Materials (Finishing)		Hard Materials (Chip Control)		Powdered Steel
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					CBN										Applicable Toolholder Page	
						IC	S	D1	RE	LE	PVD					-						
											KBN010	KBN015	KBN020	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN475		KBN475
 <p>Finishing</p>	TNGA 331S00245MEP	S00245	TNGA 160404S00545MEP	S00545	3	3/8	3/16	0.150	1/64	0.106											D25~D32 F142 F159 F160	
	332S00245MEP		160408S00545MEP																			
	333S00245MEP		160412S00545MEP																			
 <p>Sharp Edge</p>	TNGA 331MEF	F	TNGA 160404MEF	F	3	3/8	3/16	0.150	1/64	0.106												
	332MEF		160408MEF																			
	333MEF		160412MEF																			
 <p>Double-Sided</p>	TNGA 331ME6	S00525	TNGA 160404ME6	S01225	6	3/8	3/16	0.150	1/64	0.106												
	332ME6		160408ME6																			
	333ME6		160412ME6																			
 <p>Interruption</p>	TNGA 331T00515ME	T00515	TNGA 160404T01215ME	T01215	3	3/8	3/16	0.150	1/64	0.106												
	332T00515ME		160408T01215ME																			
	333T00515ME		160412T01215ME																			
	TNGA 3302S00525ME	S00525	TNGA 160401S01225ME	S01225	3	3/8	3/16	0.150	0.004	0.114												
	3305S00525ME		160402S01225ME																			
331S00525ME	160404S01225ME																					
332S00525ME	160408S01225ME																					
333S00525ME	160412S01225ME																					
 <p>Tough</p>	TNGA 331S00730MET	S00730	TNGA 160404S01730MET	S01730	3	3/8	3/16	0.150	1/64	0.106												
	332S00730MET		160408S01730MET																			
	333S00730MET		160412S01730MET																			
 <p>Interruption</p>	TNGA 331S01630MEH	S01630	TNGA 160404S04030MEH	S04030	3	3/8	3/16	0.150	1/64	0.106												
	332S01630MEH		160408S04030MEH																			
	333S01630MEH		160412S04030MEH																			

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

CBN and PCD Inserts
sold in 1 piece boxes

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

80° Trigon

How to read this page See page B15

Cutting Edge Preparation				Material Compatibility														Applicable Toolholder Page				
Symbol	Specification	Example		Gray Cast Iron (with Scale)		Gray Cast Iron (without Scale)		Nodular Cast Iron (with Scale)		Hard Materials (Roughing)		Hard Materials (Finishing)		Hard Materials (Chip Control)		Powdered Steel						
Symbol	Specification	F	E	T	S	IC	S	D1	RE	LE	KBN010	KBN015	KBN020	KBN05M	KBN25M	KBN35M	KBN60M	KBN475	KBN525			
F	Sharp Edge	F																			K	
E	R-Honed	E003																				H
T	Chamfered	T00515																				H
S	Chamfered and R-Honed	S00525																				-
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					CBN											
						IC	S	D1	RE	LE	PVD					-						
	WNGA 431MEF 432MEF	F	WNGA 080404MEF 080408MEF	F	3	1/2	3/16	0.203	1/64	0.079												
	WNGA 431T00515ME 432T00515ME	T00515	WNGA 080404T01215ME 080408T01215ME	T01215	3	1/2	3/16	0.203	1/64	0.079												
	WNGA 431S00525ME 432S00525ME 433S00525ME	S00525	WNGA 080404S01225ME 080408S01225ME 080412S01225ME	S01225	3	1/2	3/16	0.203	1/64	0.079	●	●	●	●	●	●	●	●	●	●	●	D48~D51 F162 F164 F165
	WNGA 431S00730MET 432S00730MET 433S00730MET	S00730	WNGA 080404S01730MET 080408S01730MET 080412S01730MET	S01730	3	1/2	3/16	0.203	1/64	0.079	●	●	●	●	●	●	●	●	●	●	●	

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

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

CBN and PCD Inserts sold in 1 piece boxes

80° Diamond / Solid

How to read this page See page B15

Cutting Edge Preparation

Symbol	Specification	Example	
F	Sharp Edge	F	Sharp Edge
E	R-Honed	E003	R0.003" Honed
T	Chamfered	T00515	0.005" × 15° Chamfered
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed

Gray Cast Iron (with Scale)	✘	K
Gray Cast Iron (without Scale)	✘	
Nodular Cast Iron (with Scale)		
Hard Materials (Roughing)		H
Hard Materials (Finishing)	●	
Hard Materials (Chip Control)		
Powdered Steel		-

Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)			Applicable Toolholder Page	
						IC	S	RE		
	CNM 322 323	S00820	CNMN 090308S02020 090312S02020	S02020	4	3/8	1/8	1/32 3/64	● ●	D66
	CNM 433 434	S00820	CNMN 120412S02020 120416S02020	S02020	4	1/2	3/16	3/64 1/16	● ●	D53

- CBN / PCD INSERTS
- CBN
- PCD
- NEGATIVE
- C
- D
- S
- T
- V
- W
- SOLID
- GROOVING

Round / Solid

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)		✳		K	
Symbol	Specification	Example		Gray Cast Iron (without Scale)		✳		K	
F	Sharp Edge	F	Sharp Edge	Nodular Cast Iron (with Scale)					
E	R-Honed	E003	R0.003" Honed	Hard Materials (Roughing)					
T	Chamfered	T00515	0.005" × 15° Chamfered	Hard Materials (Finishing)		●		H	
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed	Hard Materials (Chip Control)					
				Powdered Steel				-	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	Dimensions (in)		CBN	Applicable Toolholder Page	
					IC	S			
	RNM 22	S00820	RNMN 060300S02020	S02020	1/4	1/8	●	-	
	RNM 32	S00820	RNMN 090300S02020	S02020	3/8	1/8	●	D67	
	RNM 42	S00820	RNMN 120300S02020	S02020	1/2	1/8	●		
	RNM 43	S00820	RNMN 120400S02020	S02020	1/2	3/16	●	D63~D64 D67	

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

CBN and PCD Inserts
 sold in 1 piece boxes

90° Square / Solid

How to read this page See page B15

Cutting Edge Preparation

Symbol	Specification	Example	
F	Sharp Edge	F	Sharp Edge
E	R-Honed	E003	R0.003" Honed
T	Chamfered	T00515	0.005" × 15° Chamfered
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed

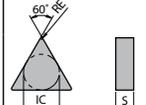
Gray Cast Iron (with Scale)	✖	K
Gray Cast Iron (without Scale)	✖	
Nodular Cast Iron (with Scale)		
Hard Materials (Roughing)		H
Hard Materials (Finishing)	●	
Hard Materials (Chip Control)		
Powdered Steel		

Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)			CBN	Applicable Toolholder Page	
						IC	S	RE			
	SNM 322	S00820	SNMN 090308S02020	S02020	8	3/8	1/8	1/32	●	D69, D70	
	323		090312S02020					3/64			
	SNM 422	S00820	SNMN 120308S02020	S02020	8	1/2	1/8	1/32	●		
	SNM 423		SNMN 120312S02020					3/64			
	SNM 433	S00820	SNMN 120412S02020	S02020	8	1/2	3/16	3/64	●		D56~D60 D69, D70
	434		120416S02020					1/16			
435	120420S02020		5/64								

CBN / PCD INSERTS
 CBN
 PCD
 NEGATIVE
 C
 D
 S
 T
 V
 W
 SOLID
 GROOVING

60° Triangle / Solid

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)		✖		K	
Symbol	Specification	Example		Gray Cast Iron (without Scale)		✖		K	
F	Sharp Edge	F	Sharp Edge	Nodular Cast Iron (with Scale)		✖		K	
E	R-Honed	E003	R0.003" Honed	Hard Materials (Roughing)		●		H	
T	Chamfered	T00515	0.005" × 15° Chamfered	Hard Materials (Finishing)		●		H	
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed	Hard Materials (Chip Control)		●		H	
				Powdered Steel				-	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)			Applicable Toolholder Page
						IC	S	RE	
 	TNM 222	S00820	TNMN 110308S02020	S02020	6	1/4	1/8	1/32	● D72, F168
	TNM 332	S00820	TNMN 160408S02020	S02020	6	3/8	3/16	1/32	● D62
	333		160412S02020	S02020	6	3/8	3/16	3/64	● D62

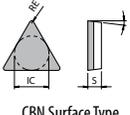
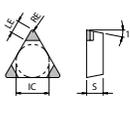
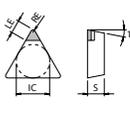
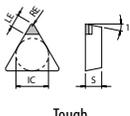
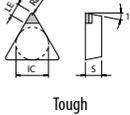
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts sold in 1 piece boxes

60° Triangle

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)				K								
				Gray Cast Iron (without Scale)				H								
Symbol	Specification	Example		Hard Materials (Roughing)				H								
F	Sharp Edge	F	Sharp Edge	Hard Materials (Finishing)				-								
E	R-Honed	E003	R0.003" Honed	Hard Materials (Chip Control)				-								
T	Chamfered	T00515	0.005" × 15° Chamfered	Powdered Steel				-								
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed													
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)				CBN			Applicable Toolholder Page			
						IC	S	RE	LE	PVD	-	-				
											KBN10M	KBN5T0	KBN5Z5			
  CBN Surface Type	TBG 12105T00315	T00315	TBGN 060102T00815	T00815	3	5/32	1/16	1/64	-	●	●	●	-			
	1211T00315		060104T00815											●	●	●
	1212T00315		060108T00815											●	●	●
 	TPG 221T00315ME	T00315	TPGN 110304T00815ME	T00815	3	1/4	1/8	1/64	0.098	●	●	●	F131			
 	TPG 221T00315SE	T00315	TPGN 110304T00815SE	T00815	1	1/4	1/8	1/64	0.098	●	●	●				
  Tough	TPG 3205T00315SE	T00315	TPGN 160302T00815SE	T00815	1	3/8	1/8	1/64	0.094	●	●	●				
	321T00315SE		160304T00815SE											●	●	●
	322T00315SE		160308T00815SE											●	●	●
 	TPG 221S00435SET	S00435	TPGN 110304S01035SET	S01035	1	1/4	1/8	1/64	0.098	●	●	●				
	TPG 321S00435SET	S00435	TPGN 160304S01035SET	S01035	1	3/8	1/8	1/64	0.094	●	●	●				

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

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

CBN and PCD Inserts sold in 1 piece boxes

35° Diamond

How to read this page See page B15

Cutting Edge Preparation				Material Compatibility												Applicable Toolholder Page														
Symbol	Specification	Example																												
F	Sharp Edge	F	Sharp Edge																											
E	R-Honed	E003	R0.003" Honed																											
T	Chamfered	T00515	0.005" × 15° Chamfered																											
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed																											
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					CBN																			
						IC	S	D1	RE	LE	PVD			-																
											KBN010	KBN015	KBN020	KBN05M	KBN10M	KBN25M	KBN60M	KBN475	KBN510	KBN525										
	VCGW 151505T00315ME	T00315	VCGW 080202T00815ME	T00815	2	3/16	3/32	0.091	1/64	0.079	●	●	●	●	●	●	●	●	●	●	●									
	VCGW 15151T00315ME		VCGW 080204T00815ME								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	VCGW 15152T00315ME		VCGW 080208T00815ME								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	VCGW 151505S00435MET	S00435	VCGW 080202S01035MET	S01035	2	3/16	3/32	0.091	1/64	0.079	●	●	●	●	●	●	●	●	●	●	●									
	VCGW 15151S00435MET		VCGW 080204S01035MET								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	VCGW 15152S00435MET		VCGW 080208S01035MET								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	VCGW 151505T00315SE	T00315	VCGW 080202T00815SE	T00815	1	3/16	3/32	0.091	0.008	0.094	●	●	●	●	●	●	●	●	●	●	●									
	VCGW 15151T00315SE		VCGW 080204T00815SE								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	VCGW 15151S00435SET	S00435	VCGW 080204S01035SET	S01035	1	3/16	3/32	0.091	1/64	0.079	●	●	●	●	●	●	●	●	●	●	●									
	VCGW 15152S00435SET		VCGW 080208S01035SET								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

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

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

CBN and PCD Inserts sold in 1 piece boxes

GBA

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)										K			
				Gray Cast Iron (without Scale)										H			
Symbol	Specification	F	Example	Hard Materials (Roughing)										H			
F	Sharp Edge	F	Sharp Edge	Hard Materials (Finishing)										H			
E	R-Honed	E003	R0.003" Honed	Hard Materials (Chip Control)										-			
T	Chamfered	T00515	0.005" × 15° Chamfered	Powdered Steel										-			
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed														
Insert	Part Number	Edge Prep (in)	No. of Edges	Dimensions (mm)								Tolerance (mm)		CBN	Applicable Toolholder Page		
				CW		CDX	IC	S	D1	RE	LE	CW min.	CW max.			KBN510 KBN525	
				in	mm												
 <p>External / Internal Grooving</p>	GBA43R 125-020	E003	1	0.049	1.25	2											●
	150-020			0.059	1.5	3.5										●	
	200-020			0.079	2	3.5	12.7	4.76	5.5	0.2	1.9	-0.03	+0.03		●		
	250-020			0.098	2.5	4										●	
	300-020			0.118	3	4										●	
	GBA43L 125-020			0.049	1.25	2										●	
	150-020			0.059	1.5	3.5										●	
	200-020			0.079	2	3.5	12.7	4.76	5.5	0.2	1.9	-0.03	+0.03		●		
	250-020			0.098	2.5	4										●	
	300-020			0.118	3	4										●	

Right-hand shown
CDX shows available grooving depth.

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

GDGS

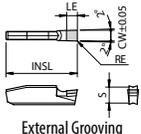
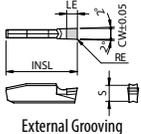
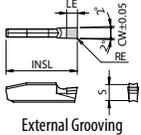
How to read this page See page B15

- CBN / PCD INSERTS
- CBN
- PCD
- POSITIVE
-
-
-
-
-
-
- SOLID
- GROOVING

Cutting Edge Preparation				Gray Cast Iron (with Scale)										K	
				Gray Cast Iron (without Scale)										H	
Symbol	Specification	Example		Nodular Cast Iron (with Scale)										H	
F	Sharp Edge	F	Sharp Edge	Hard Materials (Roughing)										-	
E	R-Honed	E003	R0.003" Honed	Hard Materials (Finishing)										●	
T	Chamfered	T00515	0.005" × 15° Chamfered	Hard Materials (Chip Control)										●	
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed	Powdered Steel										● -	
Insert	Part Number	Edge Prep (in)	No. of Edges	Dimensions (mm)						Tolerance (mm)		CBN		Applicable Toolholder Page	
				CW		S	RE	INSL	LE	CW min.	CW max.	PVD	-		
				in	mm										KBN05M
<p>External Grooving</p>	GDGS 2020N-020NB	E003	1	0.079	2	4.3	0.2	20	2.9	-0.03	+0.03	●	●	G44~G56	
		E0008	1	0.118	3	4.3	0.4	20	2.9	-0.03	+0.03	●	●		
	GDGS 3020N-040NB	E003	1	0.157	4	4.3	0.4	20	2.9	-0.03	+0.03	●	●		
		E0008	1	0.197	5	4.3	0.4	20	2.9	-0.03	+0.03	●	●		
	GDGS 4020N-040NB	E008	1	0.236	6	4.3	0.4	20	2.9	-0.03	+0.03	●	●		G44~G45 G48~G56

GMN

How to read this page See page B15

Cutting Edge Preparation				Gray Cast Iron (with Scale)										K	
				Gray Cast Iron (without Scale)										-	
Symbol	Specification	Example		Nodular Cast Iron (with Scale)										H	
F	Sharp Edge	F	Sharp Edge	Hard Materials (Roughing)										-	
E	R-Honed	E003	R0.003" Honed	Hard Materials (Finishing)										○ ●	
T	Chamfered	T00515	0.005" × 15° Chamfered	Hard Materials (Chip Control)										-	
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed	Powdered Steel										-	
Insert	Part Number	Edge Prep (in)	No. of Edges	Dimensions (mm)						Tolerance (mm)		CBN	Applicable Toolholder Page		
				CW		S	RE	INSL	LE	CW min.	CW max.	KBN510 KBN525			
				in	mm										
 	GMN 2	E003	1	0.079	2	4.3	0.2	20	2.9	-0.05	+0.05	△ △	-		
 	GMN 3	E003	1	0.118	3	4.3	0.4	20	2.9	-0.05	+0.05	△ △	-		
 	GMN 4	E003	1	0.157	4	4.3	0.4	20	2.9	-0.05	+0.05	△ △	-		

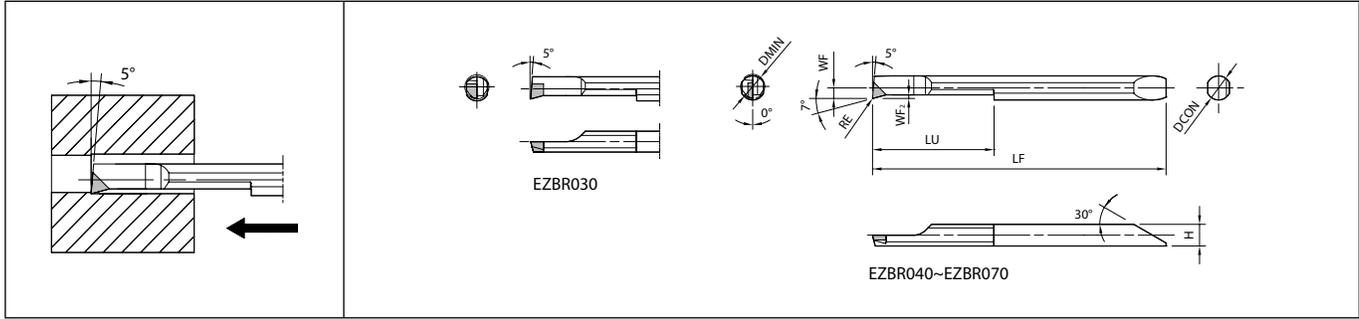
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

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

CBN and PCD Inserts
 sold in 1 piece boxes

EZB-NB (Boring)

How to read this page See page B15



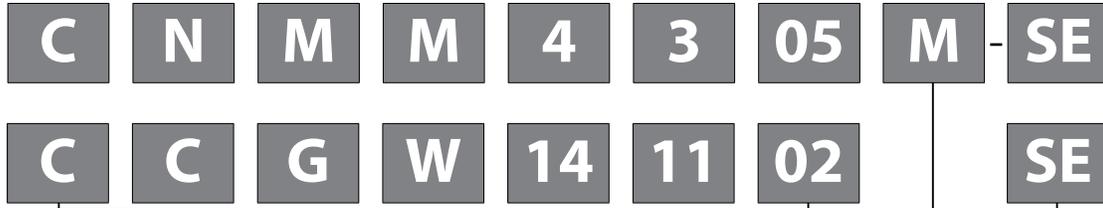
Right-hand shown

Dimensions

Cutting Edge Preparation				Gray Cast Iron (with Scale)										
Symbol	Specification	Example		Gray Cast Iron (without Scale)		K								
F	Sharp Edge	F	Sharp Edge	Nodular Cast Iron (with Scale)										
E	R-Honed	E003	R0.003" Honed	Hard Materials (Roughing)										
T	Chamfered	T00515	0.005" × 15° Chamfered	Hard Materials (Finishing)	●	H								
S	Chamfered and R-Honed	S00525	0.005" × 25° Chamfered and R-Honed	Hard Materials (Chip Control)										
				Powdered Steel		-								
Part Number	Edge Prep (in)	No. of Edges	Dimensions (mm)								Tolerance (mm)		CBN	Applicable Sleeve F40~F45
			DMIN	DCON	H	LF	LU	WF	WF ₂	RE	RE min.	RE max.		
EZBR 030030-003NB	T00315	1	3	3	2.6	38.8	13	1.25	0.3	0.035	-0.015	+0.015	●	EZH030...
EZBR 040040-003NB	T00315	1	4	4	3.6	48.8	20	1.75	0.5	0.035	-0.015	+0.015	●	EZH040...
EZBR 050050-003NB	T00315	1	5	5	4.6	58.1	25	2.25	0.5	0.035	-0.015	+0.015	●	EZH050...
EZBR 060060-003NB	T00315	1	6	6	5.6	66.1	30	2.75	0.5	0.035	-0.015	+0.015	●	EZH060...
EZBR 070070-003NB	T00315	1	7	7	6.6	74.1	35	3.25	0.5	0.035	-0.015	+0.015	●	EZH070...

- CBN / PCD INSERTS
- CBN
- PCD
- POSITIVE
- C
- D
- S
- T
- V
- W
- SOLID
- GROOVING

Identification System (PCD Turning Inserts)



Turning Indexable Inserts Identification System [See B2](#)

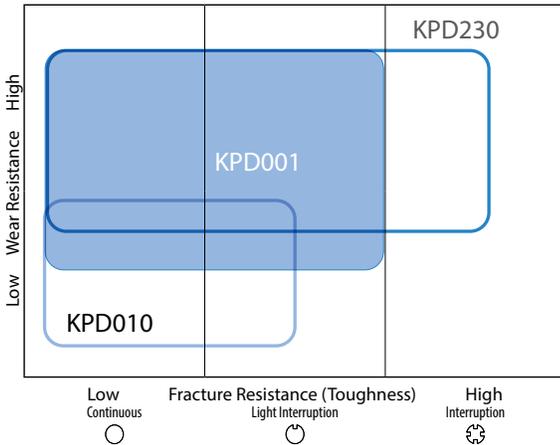
Insert Type	Part Number	Manufacturer's Option 1	Manufacturer's Option 2	Series Name	Cutting Edge Length	Number of Edges	Re-Grinding
Negative	CNMM431M-SE	M (Indicates the tool is for negative inserts/toolholders)	SE	Small Edge	Short (Small edge)	1	Not Recommended
	CNMM431M-NE		NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CNMM431M		No Indication	-	Long	1	
Positive	CCGW141102SE	-	SE	Small Edge	Short (Small edge)	1	Not Recommended
	CCGW141102NE		NE	New Value Edge	Long (85% length compared with no Indication's cutting edge)	1	Possible
	CCGW141102		No Indication	-	Long	1	

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

About re-grinding:

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

Application Map



Grades	Applications	Features
KPD001 Average grain size under 0.5 µm	<ul style="list-style-type: none"> • High speed machining of non-ferrous metals and brass • High speed machining of plastics • Machining of carbide 	<ul style="list-style-type: none"> • The world highest level micro-grain diamond • High edge strength, and superior to wear resistance, fracture resistance and edge sharpening performance
KPD010 Average grain size 10 µm	<ul style="list-style-type: none"> • High speed machining of non-ferrous metals and brass • High speed machining of plastics • Machining of carbide 	<ul style="list-style-type: none"> • Good balance of wear resistance and flexural strength • General purpose
KPD230 Mixture of fine grain with average grain size 2~30 µm and coarse grain	<ul style="list-style-type: none"> • High speed machining of non-ferrous metals and brass • High speed machining of plastics 	<ul style="list-style-type: none"> • High density PCD with mixture of coarse and fine grains features excellent abrasive wear resistance and fracture resistance
KPD250 Average grain size 25 µm (Made to order)	<ul style="list-style-type: none"> • High speed machining of high silicon aluminium alloy • Machining of carbide 	<ul style="list-style-type: none"> • Coarse grain PCD • Ave. grain size 25 µm • Superior wear resistance

Recommended Cutting Conditions

Workpiece material	Insert Grades		Cutting Conditions				Notes
	KPD001	KPD010	Vc (sfm)	D.O.C. (in)		f (ipr)	
				Small Edge and Positive Inserts	Negative Inserts		
Aluminum Alloys Zinc alloys	★	☆	980 ~ 4920	~ 0.039	~ 0.079	0.001 ~ 0.020	Both: Dry and Coolant
Copper, Brass, Bronze	★	☆	980 ~ 3280	~ 0.039	~ 0.079	0.001 ~ 0.020	
Magnesium Alloys	★	☆	1310 ~ 3940	~ 0.039	~ 0.079	0.001 ~ 0.020	
Carbide	★	☆	30 ~ 100	~ 0.012	~ 0.012	0.001 ~ 0.004	
Titanium Alloys	★	☆	330 ~ 660	~ 0.039	~ 0.079	0.002 ~ 0.008	Coolant
Glass Fiber Reinforced Plastics Carbon Fiber	★	☆	330 ~ 1970	~ 0.039	~ 0.079	0.002 ~ 0.020	Dry
Silica Filling Plastic Particle Board	★	☆	1310 ~ 2620	~ 0.039	~ 0.079	0.002 ~ 0.020	

★: 1st Recommendation ☆: 2nd Recommendation

80° Diamond

How to read this page See page B15

Cutting Edge Preparation							Non-ferrous metals (with interruption)		●		N		
All PCD Items					F		Sharp Edge						
							Non-ferrous metals (without interruption)		●				
							Titanium alloys (with interruption)		●		S		
							Titanium alloys (without interruption)		●				
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	KPDD01	
<p>Small Edge</p>	CNMM 4305M-SE	F	CNMM 120402M-SE	F	1	1/2	3/16	0.203	1/64	0.110	●	●	D8~D11 F138 F147 F148
	431M-SE		120404M-SE								●	●	
	432M-SE		120408M-SE								●	●	
<p>New Value Edge</p>	CNMM 4305M-NE	F	CNMM 120402M-NE	F	1	1/2	3/16	0.203	1/64	0.197	●	●	D8~D11 F138 F147 F148
	431M-NE		120404M-NE								●	●	
	432M-NE		120408M-NE								●	●	
	CNMM 4305M	F	CNMM 120402M	F	1	1/2	3/16	0.203	1/64	0.228	●	●	D8~D11 F138 F147 F148
	431M		120404M								●	●	
	432M		120408M								●	●	
	433M		120412M								●	●	

C
CBN / PCD
INSERTS

CBN

PCD

NEGATIVE

C

D

S

T

V

W

SOLID

GROOVING

55° Diamond

How to read this page See page B15

Cutting Edge Preparation					Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
					All PCD Items	F	Sharp Edge									
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page			
						IC	S	D1	RE	LE	-	KPDD01		KPDD10		
 Small Edge	DNMM 4305M-SE	F	DNMM 150402M-SE	F	1	1/2	3/16	0.203	1/64	0.102	0.008	0.110	●	●	D14~D19 F140, F152 F154~F156	
	431M-SE		150404M-SE								1/32	0.087	●	●		
	432M-SE		150408M-SE								1/32	0.087	●	●		
 New Value Edge	DNMM 4305M-NE	F	DNMM 150402M-NE	F	1	1/2	3/16	0.203	1/64	0.197	0.008	0.205	●	●	D14~D19 F140, F152 F154~F156	
	431M-NE		150404M-NE								1/32	0.181	●	●		
	432M-NE		150408M-NE								1/32	0.181	●	●		
	DNMM 4305M	F	DNMM 150402M	F	1	1/2	3/16	0.203	1/64	0.228	0.008	0.232	●	●	D14~D19 F140, F152 F154~F156	
	431M		150404M								1/32	0.213	●	●		
	432M		150408M								1/32	0.213	●	●		

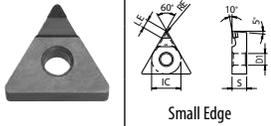
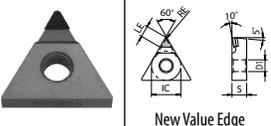
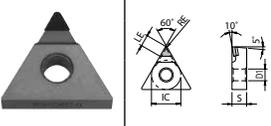
INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts
 sold in 1 piece boxes

60° Triangle

How to read this page See page B15

Cutting Edge Preparation							Non-ferrous metals (with interruption)		●		N		
All PCD Items		F		Sharp Edge		Non-ferrous metals (without interruption)		●		S			
Titanium alloys (with interruption)		●		Titanium alloys (without interruption)		●							
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	KPD001	
 <p>Small Edge</p>	TNMM 3305M-SE	F	TNMM 160402M-SE	F	1	3/8	3/16	0.150	1/64	0.102	●	●	D14~D19 F140, F152 F154~F156
	331M-SE		160404M-SE								●	●	
	332M-SE		160408M-SE								●	●	
 <p>New Value Edge</p>	TNMM 3305M-NE	F	TNMM 160402M-NE	F	1	3/8	3/16	0.150	1/64	0.122	●	●	D14~D19 F140, F152 F154~F156
	331M-NE		160404M-NE								●	●	
	332M-NE		160408M-NE								●	●	
	TNMM 3305M	F	TNMM 160402M	F	1	3/8	3/16	0.150	1/64	0.150	●	●	D14~D19 F140, F152 F154~F156
	331M		160404M								●	●	
	332M		160408M								●	●	
	333M		160412M								●	●	

- CBN / PCD INSERTS
- CBN
- PCD
- NEGATIVE
- C
- D
- S
- T
- V
- W
- SOLID
- GROOVING

CBN and PCD Inserts sold in 1 piece boxes

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

35° Diamond

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page		
						IC	S	D1	RE	LE	KP0001	KP0010			
 Small Edge	VNMM 3305M-SE	F	VNMM 160402M-SE	F	1	3/8	3/16	0.150	1/64	0.098	1/32	0.063	●	●	D34~D44
	331M-SE		160404M-SE										●	●	
	332M-SE		160408M-SE										●	●	
 New Value Edge	VNMM 3305M-NE	F	VNMM 160402M-NE	F	1	3/8	3/16	0.150	1/64	0.165	1/32	0.134	●	●	D34~D44
	331M-NE		160404M-NE										●	●	
	332M-NE		160408M-NE										●	●	
	VNMM 3305M	F	VNMM 160402M	F	1	3/8	3/16	0.150	1/64	0.189	1/32	0.157	●	●	D34~D44
	331M		160404M										●	●	
	332M		160408M										●	●	

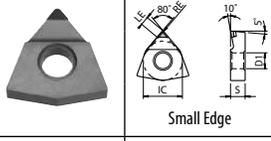
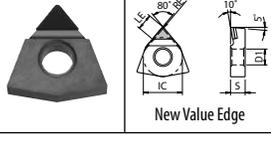
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts
 sold in 1 piece boxes

80° Trigon

How to read this page See page B15

Cutting Edge Preparation							Non-ferrous metals (with interruption)		●		N		
All PCD Items					F		Sharp Edge						
							Non-ferrous metals (without interruption)		●				
							Titanium alloys (with interruption)		●		S		
							Titanium alloys (without interruption)		●				
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	KPDD01 KPDD10	
 <p>Small Edge</p>	WNMM 4305M-SE	F	WNMM 080402M-SE	F	1	1/2	3/16	0.203	1/64	0.110	●	●	D48-D51 F162 F164 F165
	431M-SE		080404M-SE								●	●	
	432M-SE		080408M-SE								●	●	
 <p>New Value Edge</p>	WNMM 4305M-NE	F	WNMM 080402M-NE	F	1	1/2	3/16	0.203	1/64	0.197	●	●	D48-D51 F162 F164 F165
	431M-NE		080404M-NE								●	●	
											●	●	

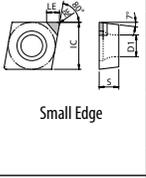
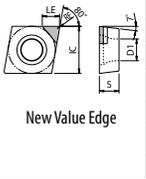
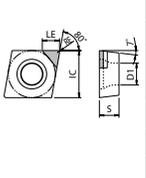
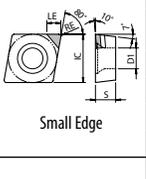
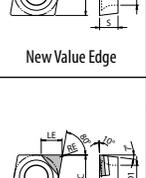
 CBN / PCD INSERTS
 CBN
 PCD
 NEGATIVE POSITIVE
 C
 D
 S
 T
 V
 W
 SOLID
 GROOVING

CBN and PCD Inserts sold in 1 piece boxes

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

80° Diamond

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page		
						IC	S	D1	RE	LE	RPD001	RPD010			
 <p>Small Edge</p>	CCGW 141102SE 141105SE 14111SE	F	CCGW 040101SE 040102SE 040104SE	F	1	0.169	0.071	0.091	0.004 0.008 1/64	0.051 0.051 0.051	● ● ●	F33~F34 F62, F64			
	CCGW 21502SE 21505SE 2151SE	F	CCGW 060201SE 060202SE 060204SE	F	1	1/4	3/32	0.110	0.004 0.008 1/64	0.091 0.091 0.091	● ● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
	CCGW 32505SE 3251SE 3252SE	F	CCGW 09T302SE 09T304SE 09T308SE	F	1	3/8	5/32	0.173	0.008 1/64 1/32	0.106 0.106 0.106	● ● ●	E26~E29 E58, E72 F62~F64 F134			
 <p>New Value Edge</p>	CCGW 141102NE 141105NE	F	CCGW 040101NE 040102NE	F	1	0.169	0.071	0.091	0.004 0.008	0.067 0.063	● ●	F33~F34 F62, F64			
	CCGW 21502NE 21505NE 2151NE	F	CCGW 060201NE 060202NE 060204NE	F	1	1/4	3/32	0.110	0.004 0.008 1/64	0.122 0.118 0.118	● ● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
	CCGW 32502NE 32505NE 3251NE 3252NE	F	CCGW 09T301NE 09T302NE 09T304NE 09T308NE	F	1	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.134 0.134 0.134 0.130	● ● ● ●	E26~E29 E58, E72 F62~F64 F134			
 <p>Small Edge</p>	CCGW 141102 141105 14111	F	CCGW 040101 040102 040104	F	1	0.169	0.071	0.091	0.004 0.008 1/64	0.075 0.075 0.075	● ● ●	F33~F34 F62, F64			
	CCGW 21502 21505 2151	F	CCGW 060201 060202 060204	F	1	1/4	3/32	0.110	0.004 0.008 1/64	0.138 0.138 0.138	● ● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
	CCGW 32502 32505 3251 3252	F	CCGW 09T301 09T302 09T304 09T308	F	1	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.150 0.150 0.146 0.142	● ● ● ●	E26~E29 E58, E72 F62~F64 F134			
 <p>Small Edge</p>	CCMT 21505SE 2151SE	F	CCMT 060202SE 060204SE	F	1	1/4	3/32	0.110	0.008 1/64	0.087 0.087	● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
	CCMT 32502SE 32505SE 3251SE 3252SE	F	CCMT 09T301SE 09T302SE 09T304SE 09T308SE	F	1	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.106 0.106 0.106 0.106	● ● ● ●	E26~E29 E58, E72 F62~F64 F134			
	CCMT 21502NE 21505NE 2151NE	F	CCMT 060201NE 060202NE 060204NE	F	1	1/4	3/32	0.110	0.004 0.008 1/64	0.110 0.110 0.110	● ● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
 <p>New Value Edge</p>	CCMT 32502NE 32505NE 3251NE	F	CCMT 09T301NE 09T302NE 09T304NE	F	1	3/8	5/32	0.173	0.004 0.008 1/64	0.134 0.134 0.134	● ● ●	E26~E29 E58, E72 F62~F64 F134			
	CCMT 21502 21505 2151	F	CCMT 060201 060202 060204	F	1	1/4	3/32	0.110	0.004 0.008 1/64	0.130 0.130 0.126	● ● ●	E26~E27, E58, E72, F33~F34 F64, F67~F68 F134			
	CCMT 32502 32505 3251 3252	F	CCMT 09T301 09T302 09T304 09T308	F	1	3/8	5/32	0.173	0.004 0.008 1/64 1/32	0.154 0.154 0.154 0.150	● ● ● ●	E26~E29 E58, E72 F62~F64 F134			

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

CBN and PCD Inserts
sold in 1 piece boxes

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

80° Diamond

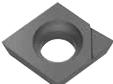
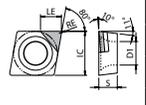
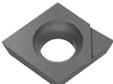
How to read this page See page B15

Cutting Edge Preparation							Non-ferrous metals (with interruption)		●		N		
All PCD Items					F		Sharp Edge						
							Non-ferrous metals (without interruption)		●				
							Titanium alloys (with interruption)		●		S		
							Titanium alloys (without interruption)		●				
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	KPDD01	
<p>Chip Control</p>	CCMT 32505APD	F	CCMT 09T302APD	F	1				0.008	0.106	●		E26~E29 E58, E72 F62~F64 F134
	3251APD		09T304APD								●		
	3252APD		09T308APD								●		

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80° Diamond

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S						
All PCD Items		F	Sharp Edge																	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page							
						IC	S	D1	RE	LE	KPDD01	KPDD10								
	CPMH 3205SE	F	CPMH 090302SE	F	1	3/8	1/8	0.177	0.008	0.106	●	●	F70~F73							
	321SE		090304SE								●	●								
	CPMH 251505NE	F	CPMH 080202NE	F	1	5/16	3/32	0.138	0.008	0.126	●	●	F70~F73							
	25151NE		080204NE								●	●								
	CPMH 3202NE		CPMH 090301NE								F	1		3/8	1/8	0.177	0.004	0.134	●	●
	3205NE		090302NE																●	●
321NE	090304NE	●	●																	
322NE	090308NE	●	●																	
	CPMH 251502	F	CPMH 080201	F	1	5/16	3/32	0.138	0.004	0.146	●	●	F70~F73							
	251505		080202								●	●								
	25151		080204								●	●								
	CPMH 3202	CPMH 090301	F	1	3/8	1/8	0.177	0.004	0.157	0.154	●	●								
3205	090302	●									●									
321	090304	●									●									
322	090308	●	●																	

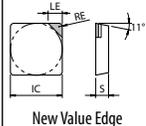
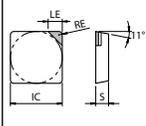
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
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QUICK CHANGE TOOLING	N
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts sold in 1 piece boxes

90° Square

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N	
All PCD Items		F	Sharp Edge									S	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)				PCD	Applicable Toolholder Page		
						IC	S	RE	LE				
  New Value Edge	SPG 421NE	F	SPGN 120304NE	F	1	1/2	1/8	1/64	0.142	●	F130		
 	SPG 421	F	SPGN 120304	F	1	1/2	1/8	1/64	0.165	●			

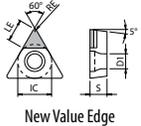
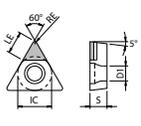
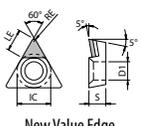
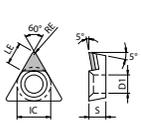
INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
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QUICK CHANGE TOOLING	N
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts
sold in 1 piece boxes

60° Triangle

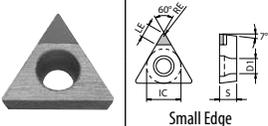
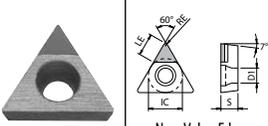
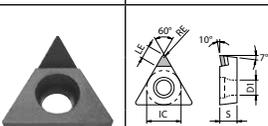
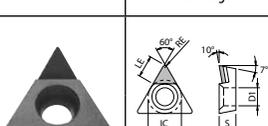
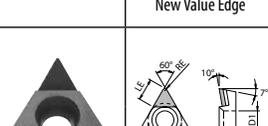
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Cutting Edge Preparation					Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		PCD		Applicable Toolholder Page
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD				
						IC	S	D1	RE	LE	KPDD001	KPDD010			
  <p>New Value Edge</p>	TBGW 12105NE	F	TBGW 060102NE	F	1	5/32	1/16	0.094	0.008	0.083	●				
	1211NE		060104NE								1/64			0.075	●
 	TBGW 12105	F	TBGW 060102	F	1	5/32	1/16	0.094	0.008	0.094	●				
	1211		060104								1/64			0.087	●
  <p>New Value Edge</p>	TBMT 12102NE	F	TBMT 060101NE	F	1	5/32	1/16	0.094	0.004	0.087	●		F35~F36 F90~F94 F98~F99		
	1211NE		060104NE								1/64			0.079	●
	1212NE		060108NE								1/32			0.067	●
 	TBMT 12105	F	TBMT 060102	F	1	5/32	1/16	0.094	0.008	0.098	●	●			
	1211		060104								1/64	0.091		●	
	1212		060108								1/32	0.079		●	

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Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page		
						IC	S	D1	RE	LE	KPDD01	KPDD10			
	TCGW 2205SE	F	TCGW 110302SE	F	1	1/4	1/8	0.110	0.008	0.098	●		E40		
	221SE		110304SE						1/64	0.094	●				
	TCGW 2205NE	F	TCGW 110302NE	F	1	1/4	1/8	0.110	0.008	0.130	●		E40		
	221NE		110304NE						1/64	0.126	●				
	TCMT 2202SE	F	TCMT 110301SE	F	1	1/4	1/8	0.110	0.004	0.102	●		E40		
	2205SE		110302SE						0.008	0.098	●				
	221SE		110304SE						1/64	0.094	●				
	TCMT 151505NE	F	TCMT 080202NE	F	1	3/16	3/32	0.098	0.008	0.083	●		E40		
	TCMT 2205NE	F	TCMT 110302NE	F	1	1/4	1/8	0.110	0.008	0.134	●				
	TCMT 151505	F	TCMT 080202	F	1	3/16	3/32	0.098	0.008	0.094	●		E40		
	15151		080204						1/64	0.087	●				

INSERT GRADES	A
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CBN/PCD INSERTS	C
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts sold in 1 piece boxes

60° Triangle

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N	
All PCD Items		F	Sharp Edge									S	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	KP001 KP010	
 Small Edge	TPGB 181505SE 18151SE 18152SE	F	TPGB 090202SE 090204SE 090208SE	F	1	7/32	3/32	0.126	0.008 1/64 1/32	0.083 0.083 0.083	●	●	F35~F36 F90~F94 F98
	TPGB 2202SE 2205SE 221SE	F	TPGB 110301SE 110302SE 110304SE	F	1	1/4	1/8	0.130	0.004 0.008 1/64	0.106 0.102 0.098	●	●	E41 F90~F97 F136
	TPGB 3205SE 321SE	F	TPGB 160302SE 160304SE	F	1	3/8	1/8	0.185	0.008 1/64	0.102 0.094	●	●	F90~F92 F96, F136
 New Value Edge	TPGB 151505NE 15151NE 15152NE	F	TPGB 080202NE 080204NE 080208NE	F	1	3/16	3/32	0.091	0.008 1/64 1/32	0.087 0.083 0.071	●	●	E41 F90~F94 F98
	TPGB 181505NE 18151NE	F	TPGB 090202NE 090204NE	F	1	7/32	3/32	0.126	0.008 1/64	0.106 0.102	●	●	F35~F36 F90~F94 F98
	TPGB 2205NE 221NE 222NE	F	TPGB 110302NE 110304NE 110308NE	F	1	1/4	1/8	0.130	0.008 1/64 1/32	0.134 0.130 0.118	●	●	E41 F90~F97 F136
	TPGB 321NE 322NE	F	TPGB 160304NE 160308NE	F	1	3/8	1/8	0.185	1/64 1/32	0.126 0.114	●	●	F90~F92 F96, F136
	TPGB 151505 15151	F	TPGB 080202 080204	F	1	3/16	3/32	0.091	0.008 1/64	0.102 0.094	●	●	E41 F90~F94 F98
	TPGB 181505 18151	F	TPGB 090202 090204	F	1	7/32	3/32	0.126	0.008 1/64	0.126 0.118	●	●	F35~F36 F90~F94 F98
	TPGB 2205 221 222	F	TPGB 110302 110304 110308	F	1	1/4	1/8	0.130	0.008 1/64 1/32	0.154 0.146 0.134	●	●	E41 F90~F97 F136

- CBN / PCD INSERTS
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60° Triangle

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Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page		
						IC	S	D1	RE	LE	KPD001	KPD010			
 <p>Small Edge</p>	TPMH 151505SE 15151SE	F	TPMH 080202SE 080204SE	F	1	3/16	3/32	0.091	0.008	0.079	●	●	E41 F90~F94 F98		
	TPMH 181505SE 18151SE	F	TPMH 090202SE 090204SE	F	1	7/32	3/32	0.126	0.008	0.094	●	●	F35~F36 F90~F94 F98		
	TPMH 2202SE 2205SE 221SE	F	TPMH 110301SE 110302SE 110304SE	F	1	1/4	1/8	0.130	0.004	0.106	●	●	E41 F90~F97 F136		
	TPMH 3205SE 321SE	F	TPMH 160302SE 160304SE	F	1	3/8	1/8	0.185	0.008	0.102	●	●	F90~F92 F96, F136		
 <p>New Value Edge</p>	TPMH 151502NE 151505NE 15151NE	F	TPMH 080201NE 080202NE 080204NE	F	1	3/16	3/32	0.091	0.004	0.091	●	●	E41 F90~F94 F98		
	TPMH 181502NE 181505NE 18151NE 18152NE	F	TPMH 090201NE 090202NE 090204NE 090208NE	F	1	7/32	3/32	0.126	0.004	0.106	●	●	F35~F36 F90~F94 F98		
	TPMH 2202NE 2205NE 221NE 222NE	F	TPMH 110301NE 110302NE 110304NE 110308NE	F	1	1/4	1/8	0.130	0.004	0.134	●	●	E41 F90~F97 F136		
	TPMH 321NE 322NE	F	TPMH 160304NE 160308NE	F	1	3/8	1/8	0.185	1/64	0.130	1/32	0.118	●	F90~F92 F96, F136	
	TPMH 151505 15151	F	TPMH 080202 080204	F	1	3/16	3/32	0.091	0.008	0.098	●	●	E41 F90~F94 F98		
	TPMH 181502 181505 18151	F	TPMH 090201 090202 090204	F	1	7/32	3/32	0.126	0.004	0.118	●	●	F35~F36 F90~F94 F98		
	TPMH 2202 2205 221 222	F	TPMH 110301 110302 110304 110308	F	1	1/4	1/8	0.130	0.004	0.154	●	●	E41 F90~F97 F136		
	TPMH 3205 321 322	F	TPMH 160302 160304 160308	F	1	3/8	1/8	0.185	0.008	0.157	1/64	0.150	1/32	0.142	●
 <p>Chip Control</p>	TPMT 2205APD	F	TPMT 110302APD	F					0.008	0.102	●	●	E41 F90~F97 F136		
	221APD	F	110304APD	F	1	1/4	1/8	0.130	1/64	0.098	●	●			
	222APD		110308APD						1/32	0.098	●	●			

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

CBN and PCD Inserts
 sold in 1 piece boxes

INSERT GRADES	A
TURNING INSERTS	B
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60° Triangle

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Cutting Edge Preparation		All PCD Items		F		Sharp Edge		Non-ferrous metals (with interruption)				●		N	
		Non-ferrous metals (without interruption)				●				Titanium alloys (with interruption)				●	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)				PCD		Applicable Toolholder Page			
						IC	S	RE	LE	KPDD01	KPDD10				
<p>Small Edge</p>	TPG 2202SE 2205SE 221SE	F	TPGN 110301SE 110302SE 110304SE	F	1	1/4	1/8	0.004 0.008 1/64	0.102 0.098 0.094	●	●	F131			
	TPG 3202SE 3205SE 321SE	F	TPGN 160301SE 160302SE 160304SE	F	1	3/8	1/8	0.004 0.008 1/64	0.102 0.102 0.094	●	●				
	TPG 321NE 322NE	F	TPGN 160304NE 160308NE	F	1	3/8	1/8	1/64 1/32	0.126 0.114	●	●				
<p>New Value Edge</p>	TPG 2205 221	F	TPGN 110302 110304	F	1	1/4	1/8	0.008 1/64	0.154 0.146	●	●				
	TPG 321 322	F	TPGN 160304 160308	F	1	3/8	1/8	1/64 1/32	0.146 0.134	●	●				

CBN / PCD INSERTS

CBN

PCD

POSITIVE

C

D

S

T

V

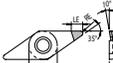
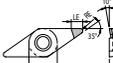
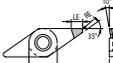
W

SOLID

GROOVING

35° Diamond

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Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N	
All PCD Items		F	Sharp Edge									S	
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	KPD001	KPD010	
 Small Edge	VBMT 2202SE	F	VBMT 110301SE 110302SE 110304SE 110308SE	F	1	1/4	1/8	0.110	0.004	0.098	●	E42~E47, E62 F102, F103 F106~F114 F137	
	2205SE								0.008	0.091	●		
	221SE								1/64	0.075	●		
	222SE								1/32	0.075	●		
 New Value Edge	VBMT 3302SE	F	VBMT 160401SE 160402SE 160404SE 160408SE	F	1	3/8	3/16	0.173	0.004	0.106	●	E45~E47 F102~F103 F106~F114 F137	
	3305SE								0.008	0.098	●		
	331SE								1/64	0.083	●		
	332SE								1/32	0.079	●		
 New Value Edge	VBMT 2202NE	F	VBMT 110301NE 110302NE 110304NE 110308NE	F	1	1/4	1/8	0.110	0.004	0.102	●	E42~E47, E62 F102, F103 F106~F114 F137	
	2205NE								0.008	0.094	●		
	221NE								1/64	0.079	●		
	222NE								1/32	0.122	●		
 New Value Edge	VBMT 3302NE	F	VBMT 160401NE 160402NE 160404NE 160408NE	F	1	3/8	3/16	0.173	0.004	0.110	●	E45~E47 F102~F103 F106~F114 F137	
	3305NE								0.008	0.102	●		
	331NE								1/64	0.087	●		
	332NE								1/32	0.118	●		
 Standard Edge	VBMT 2202	F	VBMT 110301 110302 110304 110308	F	1	1/4	1/8	0.110	0.004	0.118	●	E42~E47, E62 F102, F103 F106~F114 F137	
	2205								0.008	0.110	●		
	221								1/64	0.094	●		
	222								1/32	0.138	●		
 Standard Edge	VBMT 3302	F	VBMT 160401 160402 160404 160408	F	1	3/8	3/16	0.173	0.004	0.126	●	E45~E47 F102~F103 F106~F114 F137	
	3305								0.008	0.118	●		
	331								1/64	0.102	●		
	332								1/32	0.138	●		

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

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

CBN and PCD Inserts
 sold in 1 piece boxes

35° Diamond

How to read this page See page B15

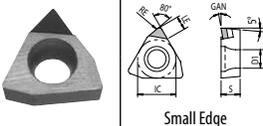
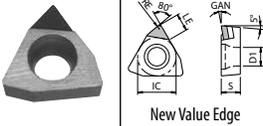
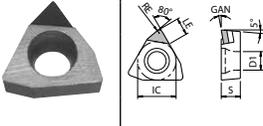
Cutting Edge Preparation							Non-ferrous metals (with interruption)		●		N		
All PCD Items		F	Sharp Edge				Non-ferrous metals (without interruption)		●				
							Titanium alloys (with interruption)		●		S		
							Titanium alloys (without interruption)		●				
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page
						IC	S	D1	RE	LE	-	RPD010	
 Small Edge	VCMT 151505SE	F	VCMT 080202SE	F	1	3/16	3/32	0.091	1/64	0.055	●	E63 F102~F103 F106~F111 F113	
	15151SE		080204SE								●		
	15152SE		080208SE								●		
 New Value Edge	VCMT 151502NE	F	VCMT 080201NE	F	1	3/16	3/32	0.091	0.004	0.067	●	E63 F102~F103 F106~F111 F113	
	151505NE		080202NE								●		
	15151NE		080204NE								●		
	15152NE		080208NE								●		
	VCMT 151502	F	VCMT 080201	F	1	3/16	3/32	0.091	0.004	0.079	●	E63 F102~F103 F106~F111 F113	
	151505		080202								●		
	15151		080204								●		
	15152		080208								●		

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CBN and PCD Inserts sold in 1 piece boxes

80° Trigon

How to read this page See page B15

Cutting Edge Preparation				Non-ferrous metals (with interruption)		Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N		S	
All PCD Items		F	Sharp Edge												
Insert	Part Number ANSI	Edge Prep (in)	Part Number ISO	Edge Prep (mm)	No. of Edges	Dimensions (in)					PCD		Applicable Toolholder Page		
						IC	S	D1	RE	LE	KPD001	KPD010			
 <p>Small Edge</p>	WBMT 12105L-SE	F	WBMT 060102L-SE	F	1	5/32	1/16	0.091	0.008	0.051	●		F38 F116~F118 F120~F121		
	WBMT 151505L-SE	F	WBMT 080202L-SE	F	1	3/16	3/32	0.091	0.008	0.063	●				
 <p>New Value Edge</p>	WBMT 1211L-NE	F	WBMT 060104L-NE	F	1	5/32	1/16	0.091	1/64	0.063	●				
	WBMT 12102L 12105L 1211L	F	WBMT 060101L 060102L 060104L	F	1	5/32	1/16	0.091	0.008	0.075	●●				
 <p>Small Edge</p>	WBMT 151505L 15151L	F	WBMT 080202L 080204L	F	1	3/16	3/32	0.091	0.008	0.094	●●				
									1/64	0.091	●●				
 <p>Small Edge</p>	WPMT 21505SE	F	WPMT 110202SE	F	1	1/4	3/32	0.110	0.008	0.083	●				
 <p>New Value Edge</p>	WPMT 21505NE	F	WPMT 110202NE	F	1	1/4	3/32	0.110	0.008	0.106	●	F116~F118			
 <p>Small Edge</p>	WPMT 21505	F	WPMT 110202	F	1	1/4	3/32	0.110	0.008	0.122	●				

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

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

CBN and PCD Inserts sold in 1 piece boxes

GBA

How to read this page See page B15

Cutting Edge Preparation			Non-ferrous metals (with interruption)											●		N			
			Non-ferrous metals (without interruption)											●					
All PCD Items			F			Sharp Edge											●		S
Titanium alloys (with interruption)			Titanium alloys (without interruption)											●					
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)								Tolerance (mm)		PCD		Applicable Toolholder Page			
				CW		CDX	IC	S	D1	RE	LE	CW min.	CW max.	KPD001	KPD010				
				in	mm														
	GBA32R 125-010	F	1	0.049	1.25	2											●	G13~G15 G89	
	150-010			0.059	1.5	2	9.525	3.18	4.4	0.1	1.7	-0.03	+0.03	●	●				
	200-010			0.079	2	2.5									●	●			
	GBA43R 125-010	F	1	0.049	1.25	2											●	G13~G15 G89	
	150-010			0.059	1.5	3.5													●
	200-010			0.079	2	3.5	12.7	4.76	5.5	0.1	1.9	-0.03	+0.03	●	●				
	250-010			0.098	2.5	4									●	●			
	300-010			0.118	3	4									●	●			
	GBA43L 125-010			0.049	1.25	2													●
	150-010			0.059	1.5	3.5													●
	200-010			0.079	2	3.5	12.7	4.76	5.5	0.1	1.9	-0.03	+0.03	●	●				
	250-010			0.098	2.5	4									●	●			
	300-010			0.118	3	4									●	●			

CDX shows available grooving depth.
Right-hand shown

CBN / PCD INSERTS
 CBN
 PCD
 POSITIVE
 C
 D
 S
 T
 V
 W
 SOLID
 GROOVING

GVF

How to read this page [See page B15](#)

Cutting Edge Preparation			Non-ferrous metals (with interruption)										●	N		
All PCD Items			F	Sharp Edge	Non-ferrous metals (without interruption)										●	S
					Titanium alloys (with interruption)										●	
					Titanium alloys (without interruption)										●	
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)							Tolerance (mm)		PCD	Applicable Toolholder Page		
				CW		CDX	S	RE	INSL	W1	CW min.	CW max.				
				in	mm								KP0010			
	GVFR 250-020B	F	1	0.098	2.5	4.8									●	G137~G142 G145
	300-020B			0.118	3	4.8	5	0.2	20	5.8	-0.03	+0.03	●			
	400-020B			0.157	4	5.3							□			
	GVFL 250-020B	F	1	0.098	2.5	4.8									●	
	300-020B			0.118	3	4.8	5	0.2	20	5.8	-0.03	+0.03	●			
	400-020B			0.157	4	5.3							□			
	GVFR 350-040C	F	1	0.138	3.5	6.8	7	0.4	27	7	-0.03	+0.03	□			

CDX shows available grooving depth.
Right-hand shown

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

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

CBN and PCD Inserts
sold in 1 piece boxes

GDGS

How to read this page See page B15

Cutting Edge Preparation			Non-ferrous metals (with interruption)										●	N		
All PCD Items			F	Sharp Edge	Non-ferrous metals (without interruption)										●	N
					Titanium alloys (with interruption)										●	S
					Titanium alloys (without interruption)										●	S
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)						Tolerance (mm)		PCD	Applicable Toolholder Page			
				CW		S	RE	INSL	LE	CW min.	CW max.					
				in	mm											
	GDGS 2020N-020NB	F	1	0.079	2	4.3	0.2	20	2.9	-0.03	+0.03	●	G44~G56			
	GDGS 3020N-020NB	F	1	0.118	3	4.3	0.2	20	2.9	-0.03	+0.03	●				
	GDGS 4020N-020NB	F	1	0.157	4	4.3	0.2	20	2.9	-0.03	+0.03	●				
	GDGS 5020N-020NB	F	1	0.197	5	4.3	0.2	20	2.9	-0.03	+0.03	●	G44~G45 G48~G56			
	GDGS 6020N-020NB	F	1	0.236	6	4.3	0.2	20	2.9	-0.03	+0.03	●				

CBN / PCD INSERTS

CBN

PCD

POSITIVE

C

D

S

T

V

W

SOLID

GROOVING

GMN

How to read this page See page B15

Cutting Edge Preparation			Non-ferrous metals (with interruption)										●		N	
All PCD Items			Non-ferrous metals (without interruption)										●		S	
F			Titanium alloys (with interruption)										●		S	
Sharp Edge			Titanium alloys (without interruption)										●		S	
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)								Tolerance (mm)		PCD		Applicable Toolholder Page
				CW		S	RE	INSL	LE	CW min.	CW max.	KPD001	KPD010			
				in	mm											
	GMN 2	F	1	0.079	2	4.3	0.2	20	2.9	-0.05	+0.05	△	△	-		
	GMN 3	F	1	0.118	3	4.3	0.2	20	2.9	-0.05	+0.05	△	△			
	GMN 4	F	1	0.157	4	4.3	0.2	20	2.9	-0.05	+0.05	△	△			
	GMN 5	F	1	0.197	5	4.3	0.2	20	2.9	-0.05	+0.05	△	△			
	GMN 6	F	1	0.236	6	4.3	0.2	20	2.9	-0.05	+0.05	△	△			

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

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

CBN and PCD Inserts sold in 1 piece boxes

GMGW

How to read this page See page B15

Cutting Edge Preparation			Non-ferrous metals (with interruption)											●	N			
All PCD Items			F	Sharp Edge		Non-ferrous metals (without interruption)											●	N
						Titanium alloys (with interruption)											●	S
						Titanium alloys (without interruption)											●	S
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)							Tolerance (mm)		PCD	Applicable Toolholder Page				
				CW		S	RE	INSL	LE	CW min.	CW max.	KPD001						
				in	mm													
	GMGW 6030-30R	F	1	0.236	6	5.5	3	30	4.5	-0.03	+0.03		●	672				
	GMGW 8030-40R	F	1	0.315	8	5.5	4	30	6	-0.03	+0.03	●						
	GMGW 8030-40R-HR	F	1	0.315	8	5.5	4	30	5	-0.03	+0.03	●						

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

CBN / PCD INSERTS

CBN

PCD

POSITIVE

C

D

S

T

V

W

SOLID

GROOVING

TKF

How to read this page See page B15

Cutting Edge Preparation			Non-ferrous metals (with interruption)														●	N			
			Non-ferrous metals (without interruption)														●	N			
All PCD Items	F	Sharp Edge	Titanium alloys (with interruption)														●	S			
			Titanium alloys (without interruption)														●	S			
Insert	Part Number	Edge Prep	No. of Edges	Dimensions (mm)										Angle (°)	Tolerance (mm)				PCD	Applicable Toolholder Page	
				CW		CDX	S	S1	D1	RE	LE	W1	PSIR %		CW min.	CW max.	RE (+/-) min.	RE (+/-) max.			
				in	mm									-					KPDD001		
	TKF12R 200-AGT	F	1	0.079	2	4.8	8.7	8.3	5	0.1	4.2	3	0	-0.03	+0.03	-0.05	0	●	E15 E16		
	250-AGT			0.098	2.5															4.2	●
	TKF12R 200-AS	F	1	0.079	2	5	8.7	7.3	5	0.1	5.3	3	0	-0.03	+0.03	-0.05	0	●			
	TKF16R 250-AS			0.098	2.5	8	9.5	8	5	0.1	6.3	4	0	-0.03	+0.03	-0.05	0	●			
	TKF12R 150-NB	F	1	0.059	1.5	3.5 4 4	8.7	8.3	5	0.1	2	3	3	0	-0.03	+0.03	-0.05	0		●	
	200-NB			0.079	2						4										●
	250-NB			0.098	2.5						4										●

Right-hand shown

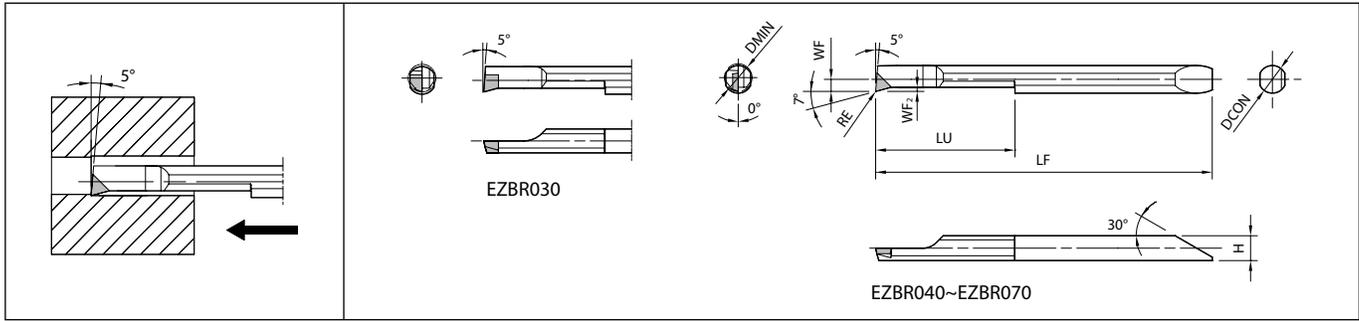
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

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

CBN and PCD Inserts
 sold in 1 piece boxes

EZB-NB (Boring)

How to read this page See page B15



Right-hand shown

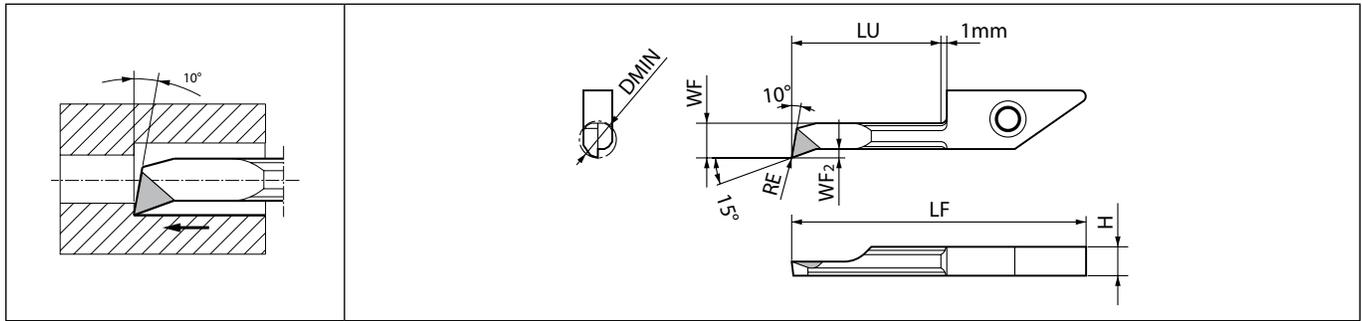
Dimensions

Cutting Edge Preparation			Non-ferrous metals (with interruption)										●	N			
All PCD Items			F	Sharp Edge		Non-ferrous metals (without interruption)										●	N
					Titanium alloys (with interruption)										●	S	
					Titanium alloys (without interruption)										●	S	
Part Number	No. of Edges	Dimensions (mm)								Tolerance (mm)			PCD	Applicable Sleeve F41 F43 F45			
		DMIN	DCON	H	LF	LU	WF	WF ₂	RE	RE min.	RE max.	KPD001					
EZBR 040040-003NB	1	4	4	3.6	48.8	20	1.75	0.5	0.035	-0.015	+0.015	●	EZH040...				
EZBR 050050-003NB	1	5	5	4.6	58.1	25	2.25	0.5	0.035	-0.015	+0.015	●	EZH050...				
EZBR 060060-003NB	1	6	6	5.6	66.1	30	2.75	0.5	0.035	-0.015	+0.015	●	EZH060...				
EZBR 070070-003NB	1	7	7	6.6	74.1	35	3.25	0.5	0.035	-0.015	+0.015	●	EZH070...				

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VNB-NB (Boring)

How to read this page [See page B15](#)



Right-hand shown

Dimensions

Cutting Edge Preparation				Non-ferrous metals (with interruption)					●		N			
All PCD Items				F					Sharp Edge		● <th colspan="2">S</th>		S	
Part Number	No. of Edges	Dimensions (mm)							PCD	Applicable Toolholder Page				
		DMIN	H	LF	LU	WF	WF ₂	RE						
VNBR 0411-02NB	1	4	3.66	30.8	11	3.5	0.5	0.2	●	F50~F53				
VNBR 0420-02NB				39.8					20		●			
VNBR 0511-02NB	1	5	3.9	30.8	11	4.5	0.7	0.2	●					
VNBR 0520-02NB				39.8					20		●			
VNBR 0620-02NB	1	6	3.9	39.8	20	5.3	1	0.2	●					
VNBR 0630-02NB				49.8					30		●			
VNBR 0720-02NB	1	7	3.9	39.8	20	6.2	1	0.2	●					
VNBR 0730-02NB				49.8					30		●			

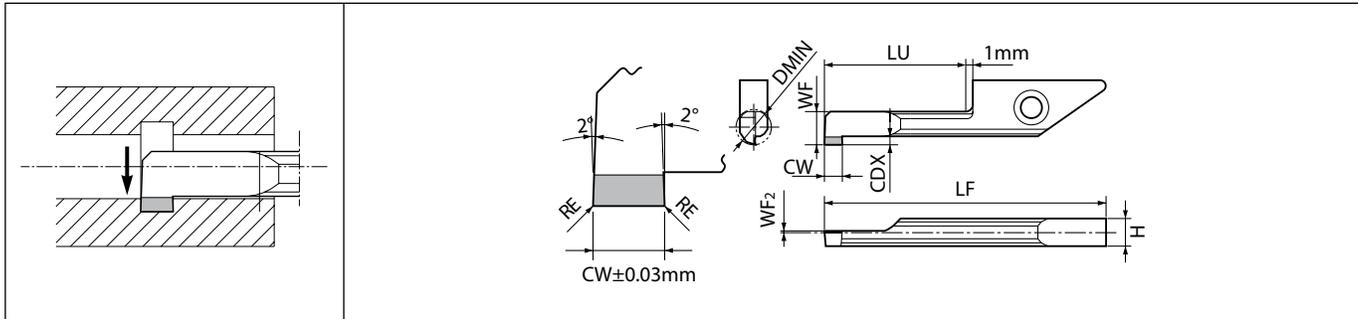
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN and PCD Inserts
 sold in 1 piece boxes

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

VNG (Internal grooving)

How to read this page See page B15



Right-hand shown

Dimensions

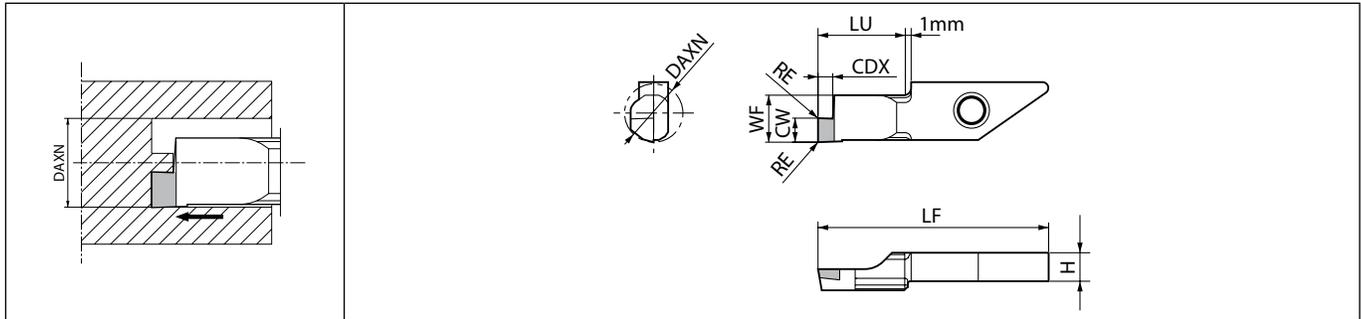
Cutting Edge Preparation			Non-ferrous metals (with interruption)										●	N	
All PCD Items			F	Sharp Edge										● <th colspan="1">S</th>	S
			Non-ferrous metals (without interruption)										● <th colspan="1">S</th>	S	
			Titanium alloys (with interruption)										● <th colspan="1">S</th>	S	
			Titanium alloys (without interruption)										● <th colspan="1">S</th>	S	
Part Number	No. of Edges	Dimensions (in)										Tolerance (mm)		PCD	Applicable Toolholder Page
		DMIN	CW	CDX	H	LF	LU	WF	WF ₂	RE	CW min.	CW max.	RPD001		
VNGR 0410-11NB	1	4	1	0.8	3.9	30.8	11	3.5	0.1	0.05	-0.03	+0.03	<input type="checkbox"/>	F50~F53	
VNGR 0420-11NB			2										<input type="checkbox"/>		
VNGR 0510-11NB	1	5	1	1	3.9	30.8	11	4.4	0.1	0.05	-0.03	+0.03	<input type="checkbox"/>		
VNGR 0520-11NB			2										<input type="checkbox"/>		
VNGR 0610-20NB	1	6	1	1.8	3.9	39.8	20	5.2	0.3	0.05	-0.03	+0.03	<input type="checkbox"/>		
VNGR 0620-20NB			2										<input type="checkbox"/>		
VNGR 0710-20NB	1	7	1	2	3.9	39.8	20	6.2	0.3	0.05	-0.03	+0.03	<input type="checkbox"/>		
VNGR 0720-20NB			2										<input type="checkbox"/>		

CDX shows available grooving depth.

- CBN / PCD INSERTS
- CBN
- PCD
- POSITIVE
- C
- D
- S
- T
- V
- W
- SOLID
- GROOVING

VNFG (Face grooving)

How to read this page [See page B15](#)



Right-hand shown

Dimensions

Cutting Edge Preparation				Non-ferrous metals (with interruption)		●		N				
All PCD Items		F	Sharp Edge	Non-ferrous metals (without interruption)		● <th colspan="2">S</th>		S				
Part Number	No. of Edges	External dia. of the groove (mm)		Dimensions (in)							PCD	Applicable Toolholder Page
		DAXN (min.)	DAXX (max.)	CW	CDX	H	LF	LU	WF	RE		
VNFR 0820-10NB	1	8 (0)	∞ (∞)	2	2	3.9	29.6	10	7.3	0.05	□	F50 F52 F53
VNFR 0830-10NB	1			3	3	3.9	29.6	10	7.3	0.05	□	

CDX shows available grooving depth.

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

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

Milling Inserts

Cutting Edge Preparation				Non-ferrous metals (with interruption)													Non-ferrous metals (without interruption)		Titanium alloys (with interruption)		Titanium alloys (without interruption)		N
All PCD Items		F	Sharp Edge																				S
Part Number	Part Number ANSI	Part Number ISO	No. of Edges	Dimensions (in)											Angle (°)		PCD		Applicable Toolholder Page				
				IC	S	D1	RE	INSL	LE	BCH	BS	W1	AN	AS	KPD001	KPD010	KPD230						
		SDKN 42AUFN SDKN 1203AUFN	1	1/2	1/8	-	-	-	0.142	0.020	0.047	-	15	23	●			-					
		SEEN 42AFFN SEEN 1203AFFN	1	1/2	1/8	-	-	-	0.138	0.020	0.055	-	20	25	●	●		-					
		TEEN 32PTFR-NE TEEN 1603PTFR-NE 32PTFR 1603PTFR	1	3/8	1/8	-	-	-	0.161 0.185	0.024	0.055	-	20	22	●	●	●	-					
		TEKN 43PTFR-NE TEKN 2204PTFR-NE 43PTFR 2204PTFR	1	1/2	3/16	-	-	-	0.165 0.189	0.028	0.071	-	20	22	●	●	●	-					
		Use ISO Part Number	BDGT 11T302FR	1	-	0.150	0.110	1/64	0.453	0.150	-	-	0.264	13	18	●	●	M98~M101 M103~M105					
			BDGT 11T304FR																				
			BDGT 11T308FR																				
		Use ISO Part Number	BDGT 11T302FR-LE	1	-	0.150	0.110	1/64	0.453	0.205	-	-	0.264	13	18	●	●	M98~M99 M102~M105					
			BDGT 11T304FR-LE																				
			BDGT 11T308FR-LE																				
		Use ISO Part Number	BDMT 11T302FR	1	-	0.150	0.110	0.008	0.433	0.142	-	-	0.264	13	18	●	●	M98~M99 M102~M105					
			BDMT 11T304FR																				
		Use ISO Part Number	BDMT 170402FR	1	-	0.193	0.173	0.008	0.669	0.173	-	-	0.378	13	18	●	●	M98~M99 M102~M105					
			BDMT 170404FR																				
		NDCW 3205FRX-NE	NDCW 150302FRX-NE	1	-	1/8	0.173	0.008	0.591	0.201	-	-	3/8	-	15	●	●	M171					
		NDCW 3205FRX	NDCW 150302FRX	1	-	1/8	0.173	0.008	0.591	0.224	-	-	3/8	-	15	●	●						

Handed insert shows Right-hand