NEW PRODUCT NEWS

mgt
MEGA TECH METALWORK

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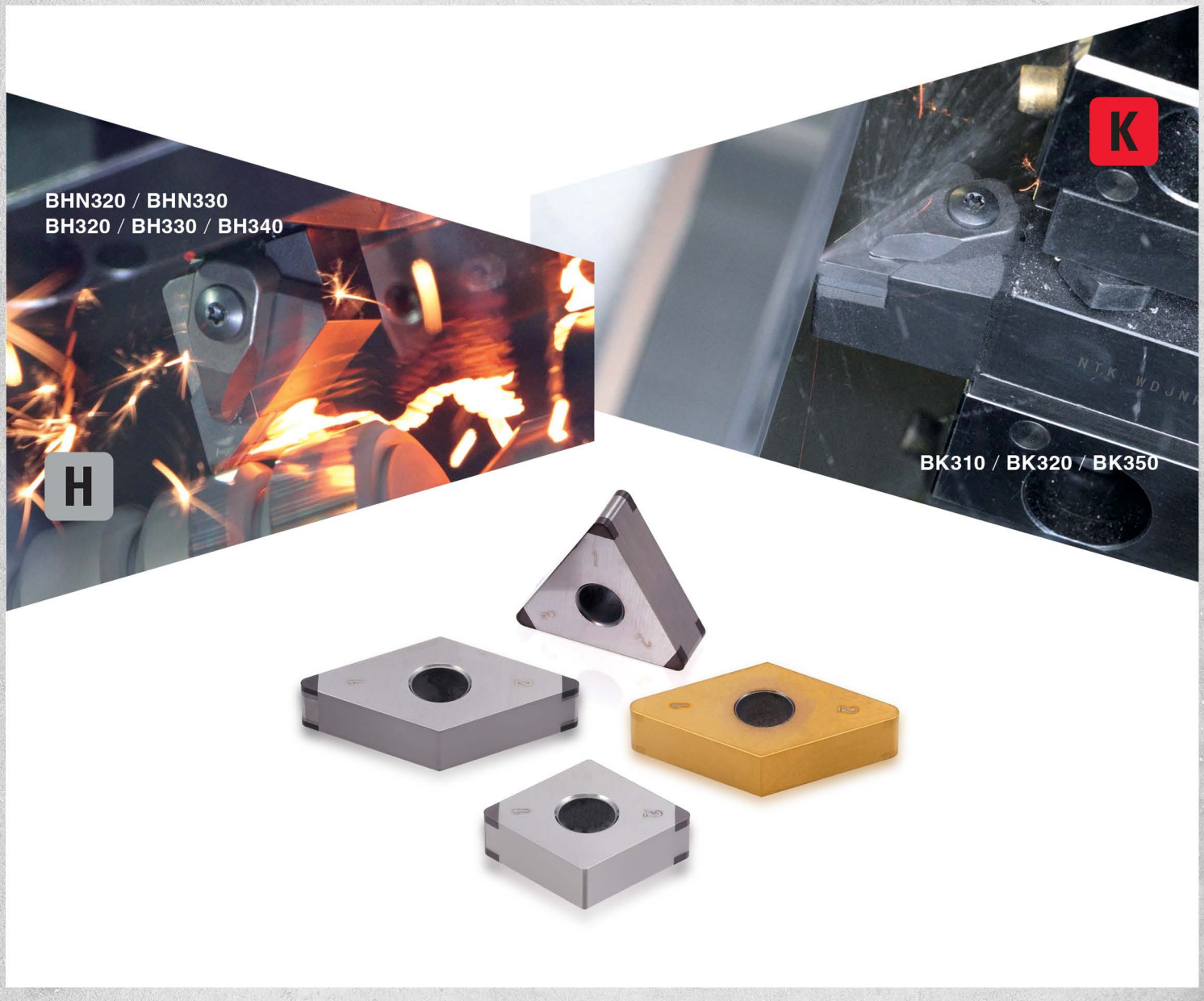
NTK
CUTTING TOOLS

The New Era of NTK CBN Grades

New CBN Grade Series
BHN / BH / BK

For turning Hardened steel, Cast iron, and Sintered powder metals



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The New Era of NTK CBN Grades

Excellent crater wear resistance, New coating achieves amazingly long tool life!

An extensive selection of cutting edge preparations tailored to meet a wide variety of turning needs.

H

Coated CBN	Uncoated CBN
BHN320 / BHN330	BH320 / BH330 / BH340

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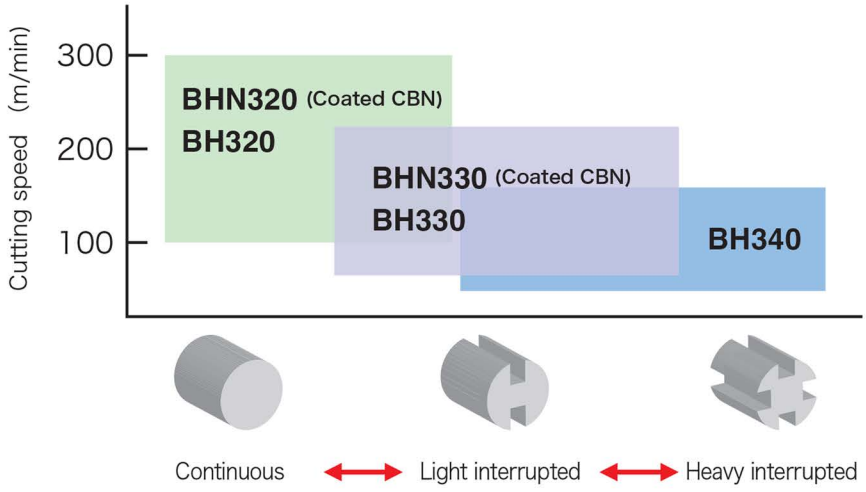
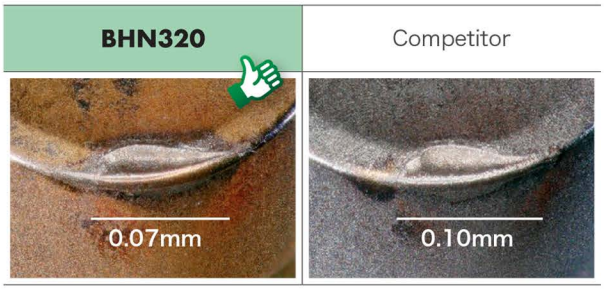
| Application area for turning

Hardened steel - Finishing

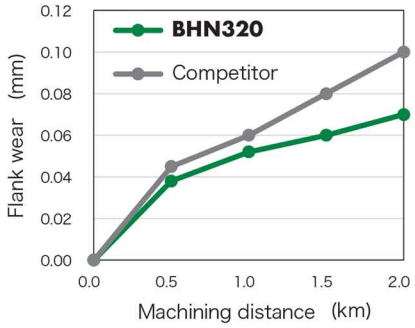


| Coated CBN BHN320

The first recommended material for continuous to light interrupted machining, with a coating that has excellent wear resistance.

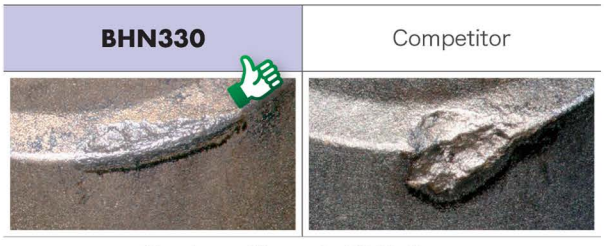


Alloy steel (HRc62)
v_C=150m/min, f=0.1mm/rev, a_p=0.2mm, Continuous



| Coated CBN BHN330

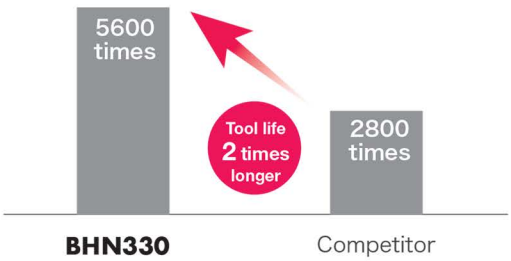
A multi-layer coating with excellent wear resistance and chipping resistance is used, making this a versatile material that can be used for continuous to interrupted machining.



Number of impacts 2800 times

Alloy steel (HRc62)
v_C=75m/min, f=0.1mm/rev, a_p=0.1mm, Heavy interrupted

Number of times until breakage



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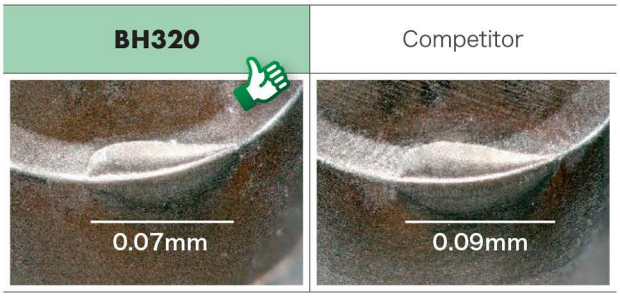
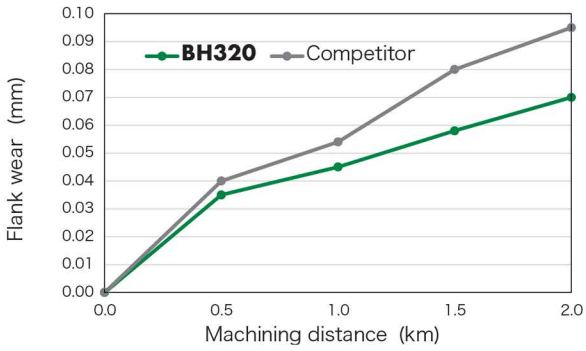
| Uncoated CBN **BH320**

CBN is bonded with a special binder, providing excellent wear resistance at high speeds and continuous cutting.

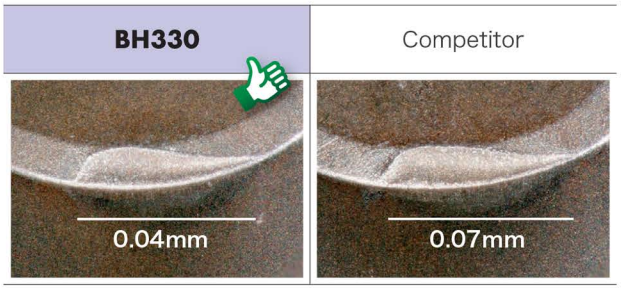


Alloy steel (HRc62)
v_C=150m/min, f=0.1mm/rev, a_p=0.2mm, Continuous

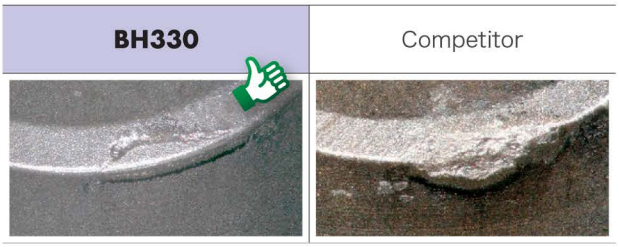


| Uncoated CBN **BH330**

A general-purpose material that exhibits excellent wear resistance and fracture resistance in continuous to heavy interrupted applications.



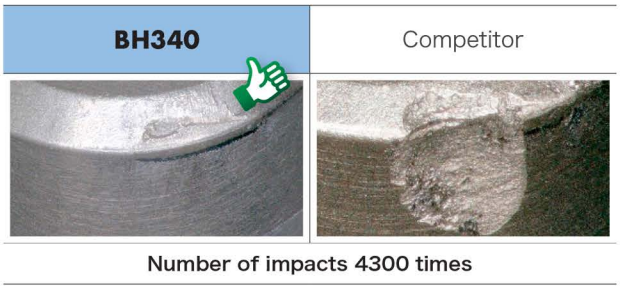
Alloy steel (HRc62)
v_C=150m/min, f=0.1mm/rev, a_p=0.2mm,
After processing 0.7km



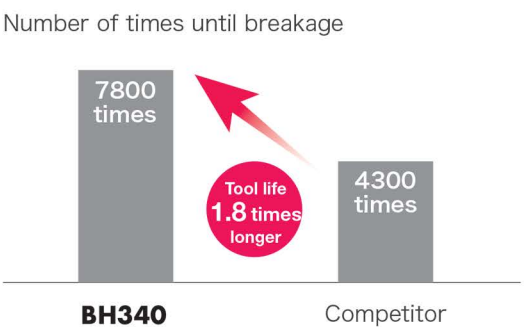
Alloy steel (HRc62)
v_C=150m/min, f=0.1mm/rev, a_p=0.2mm, Heavy interrupted

| Uncoated CBN **BH340**

High resistance to chipping and fracture, highly recommended for heavy interrupted cutting.



Alloy steel (HRc62)
v_C=75m/min, f=0.1mm/rev, a_p=0.1mm, Heavy interrupted



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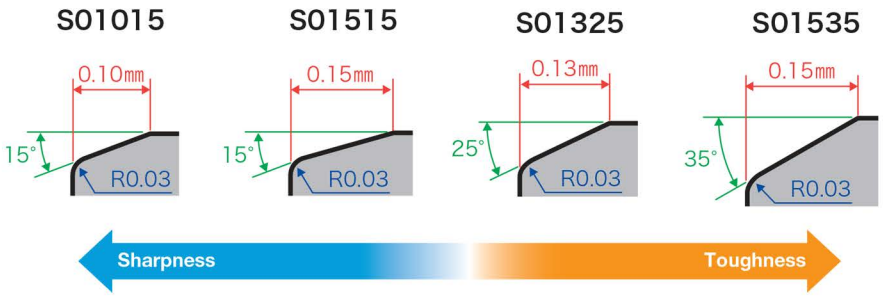
Cutting edge preparation according to processing purposes



Recommended cutting conditions

●:First recommendation
○:Second recommendation

Interruption length	Recommended material	Cutting speed (m/min)	Feed (mm/rev)	D.O.C (mm)	Coolant DRY	Coolant WET
Continuous cutting	**BHN320** (Coated CBN) **BH320**	100 to 300	up to 0.2	up to 0.5	○	●
Light interrupt cutting	**BHN330** (Coated CBN) **BH330**	75 to 225	up to 0.15		●	○
Heavy interrupted cutting	**BH340**	50 to 150	up to 0.1		●	○

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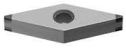
MEGA TECH METALWORK

Lineup: Negative insert

Shape	Item number	Coated BHN320	BH320	Coated BHN330	BH330	BH340	Wiper	Length of Edge mm	corner R mm	No. of corners	IC mm	S mm
	**CNGA120402PQS01015**		●					2.3	0.2	4	12.7	4.76
	CNGA120404PQS01015	●	●					2.3	0.4			
	CNGA120404PQ**S01325**	●		●	●	●		2.3				
	CNGA120404PQ**S01535**					●		2.3				
	CNGA120404QWS01015	●					Yes	2.3				
	CNGA120404QW**S01535**		●				Yes	2.3				
	CNGA120408PQS01015	●	●					2.2	0.8			
	CNGA120408PQ**S01325**	●		●	●	●		2.2				
	CNGA120408PQ**S01535**			●		●		2.2				
	CNGA120408QWS01015	●	●				Yes	2.2				
	CNGA120412PQS01015	●	●	●				2.4	1.2			
	CNGA120412PQ**S01325**			●	●			2.4				
	CNGA120412PQ**S01535**					●		2.4				
	CNGA120412QWS01015	●					Yes	2.4				
	CNGA120416PQS01325			●				3.3	1.6			
	**DNGA150402PQS01015**		●					2.7	0.2	4		
	DNGA150404PQS01325		●	●	●			2.5	0.4			
	DNGA150404PQ**S01015**	●	●					2.5				
	DNGA150404PQ**S01535**					●		2.5				
	DNGA150408PQS01015	●	●					2.1	0.8			
	DNGA150408PQ**S01325**			●	●			2.1				
	DNGA150408PQ**S01535**			●		●		2.1				
	DNGA150412PQS01015	●	●	●				2	1.2			
	DNGA150412PQ**S01325**	●		●	●			2				
	DNGA150412PQ**S01535**	●		●		●		2				
	DNGA150416PQS01325				●			3.4	1.6			
	DNGA150612PQS01015		●					2	1.2			6.35
	**SNGA120408PES01015**		●			●		2.4	0.8	8		
	SNGA120412PES01535		●					2.4	1.2			
	**TNGA160401PHS01015**	●						2.4	0.1	6	9.525	4.76
	TNGA160401PH**S01535**					●		2.4				
	TNGA160402PHS01015		●					2.3	0.2			
	TNGA160402PH**S01325**					●		2.3				
	TNGA160402PH**S01535**	●						2.3				
	TNGA160404PHS01015	●	●			●		2.2	0.4			
	TNGA160404PH**S01325**	●	●	●	●			2.2				
	TNGA160404PH**S01535**			●		●		2.2				
	TNGA160408PHS01015	●	●	●		●		1.9	0.8			
	TNGA160408PH**S01325**			●	●			1.9				
	TNGA160408PH**S01535**	●				●		1.9				
	TNGA160412PHS01015	●						2.4	1.2			
	TNGA160412PH**S01325**	●		●				2.4				
	TNGA160412PH**S01535**					●		2.4				
	**VNGA160401PQS01015**		●					3.7	0.1	4		
	VNGA160401PQ**S01535**					●		3.7				
	VNGA160402PQS01015	●	●					3.5	0.2			
	VNGA160402PQ**S01325**	●		●	●			3.5				
	VNGA160402PQ**S01535**					●		3.5				
	VNGA160404PQS01015	●	●	●				3.1	0.4			
	VNGA160404PQ**S01325**	●		●	●	●		3.1				
	VNGA160404PQ**S01535**					●		3.1				
	VNGA160408PQS01015	●	●					2.2	0.8			
	VNGA160408PQ**S01325**	●		●	●			2.2				
	VNGA160408PQ**S01535**					●		2.2				

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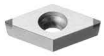
MEGA TECH METALWORK

The New Era of NTK CBN Grades

Lineup: Positive insert

Shape	Item number	Coated BHN320	BH320	Coated BHN330	BH330	BH340	Wiper	Length of Edge mm	corner R mm	No. of corners	IC mm	S mm
	CCGW060204PDS01015		●		●	●		2.3	0.4	2	6.35	2.38
	CCGW09T302PDS01515		●					2.3	0.2		9.525	3.97
	CCGW09T304PDS01015		●					2.3	0.4			
	CCGW09T304PDS01535					●		2.3				
	CCGW09T308PDS01535					●		2.2	0.8			
	DCGW070202PDS01015		●					2.7	0.2	2	6.35	2.38
	DCGW070204PDS01015		●					2.5	0.4			
	DCGW070204PDS01535					●		2.5				
	DCGW11T302PDS01015		●					2.7	0.2		9.525	3.97
	DCGW11T304PDS01015		●					2.5	0.4			
	DCGW11T304PDS01535					●		2.5				
	DCGW11T308PDS01015		●					2.1	0.8			
	TPGN160304PTS01535					●		2.2	0.4	3		3.18
	TPGW110304PTS01015		●					2.2		3	6.35	
	TPGW110304PTS01325		●		●	●		2.2	0.4			
	TPGW110304PTS01535					●		2.2				
	TPGW110308PTS01015		●					1.9	0.8			
	TPGW110308PTS01325				●	●		1.9				
	TPGW110308PTS01535		●			●		1.9				
	TPGW110312PTS01325		●					2.4	1.2			
	VBGW160404PDS01325		●					3.1	0.4	2	9.525	4.76
	VCGW080204PDS01015		●					3.1			4.76	2.38
	VCGW110304PDS01015		●					3.1			6.35	3.18
	VCGW110304PDS01535					●		3.1				
	VCGW110308PDS01535					●		2.2	0.8			
	VCGW110312PDS01535		●					3	1.2			
	VCGW160404PDS01015		●					3.1	0.4		9.525	4.76

Workpiece condition ● Continuous ● Light interrupted ● Heavy interrupted

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The New Era of NTK CBN Grades

Excellent cutting edge sharpness provides excellent surface quality and machining accuracy

High CBN content provides excellent wear resistance and long tool life

K

Uncoated CBN

BK310 / BK320 / BK350

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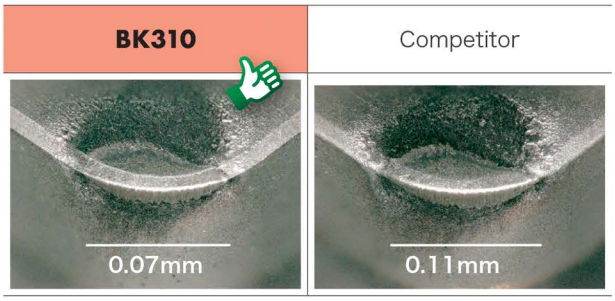
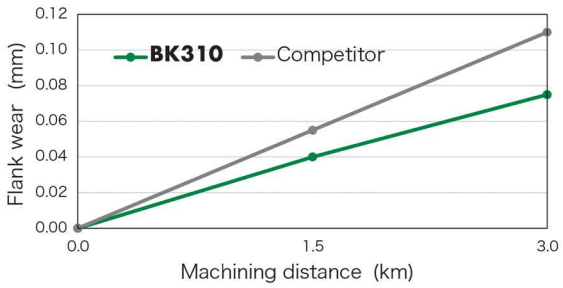
The New Era of NTK CBN Grades

| Uncoated CBN **BK310 / BK320**

High CBN content provides stable wear resistance in high-speed turning of Gray cast iron and sintered alloys.
Fine particle size provides excellent edge sharpness and is effective in suppressing burrs.

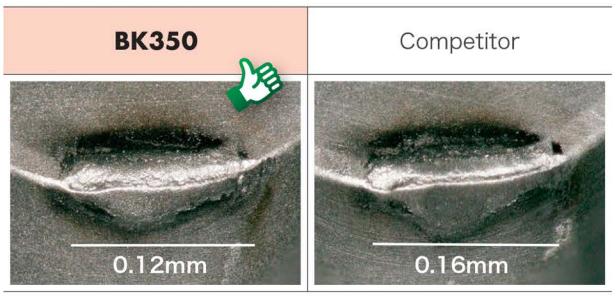


Gray cast iron (FC300)
v_C=500m/min, f=0.3mm/rev, a_p=0.3mm After processing 3Km

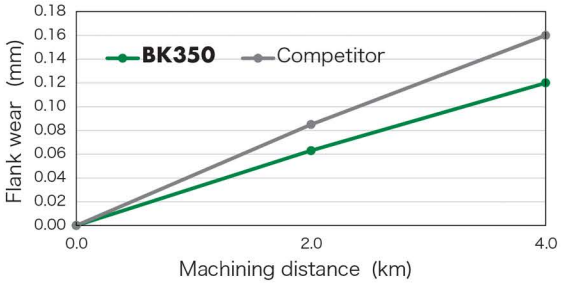


| Uncoated CBN **BK350**

General-purpose material with excellent wear resistance and chipping resistance compared to ductile cast iron for continuous to heavy interrupted use.



Ductile cast iron (FCD600)
v_C=300m/min, f=0.1mm/rev, a_p=0.2mm After processing 4Km



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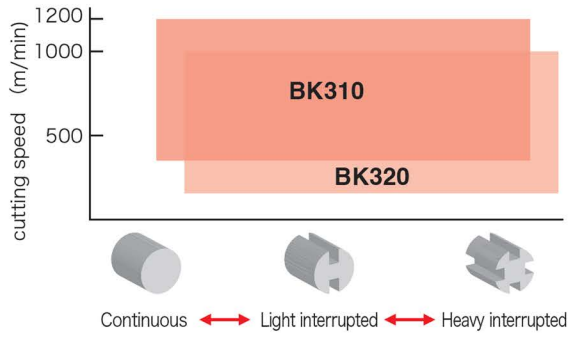
The New Era of NTK CBN Grades

MEGA TECH METALWORK

Application area for turning

Cast iron - Finishing

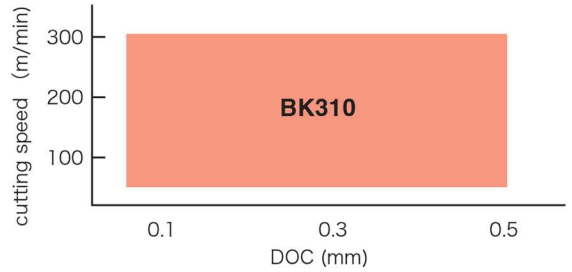


Recommended cutting conditions

●:First recommendation
○:Second recommendation

Grade	Cutting speed	Feed	D.O.C	Coolant	
	(m/min)	(mm/rev)	(mm)	DRY	WET
BK310 BK320	400 to 1,200	up to 0.5	up to 2.0	○	●

Sintered powder metal

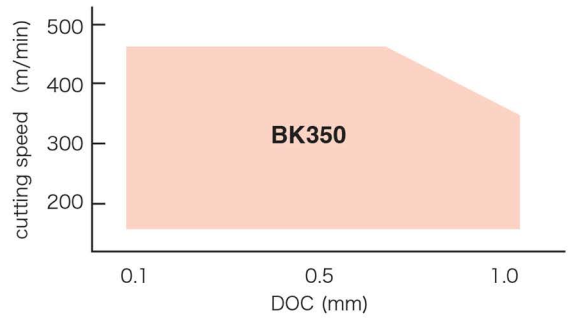


Recommended cutting conditions

●:First recommendation
○:Second recommendation

Grade	Cutting speed	Feed	D.O.C	Coolant	
	(m/min)	(mm/rev)	(mm)	DRY	WET
BK310	40 to 300	up to 0.5	up to 0.5	○	●

Ductile cast iron - Finishing

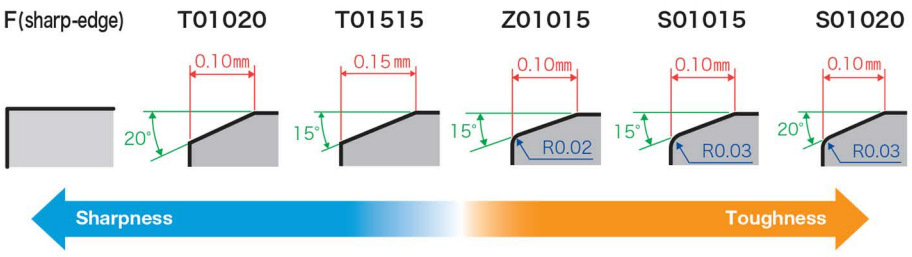


Recommended cutting conditions

●:First recommendation
○:Second recommendation

Grade	Cutting speed	Feed	D.O.C	Coolant	
	(m/min)	(mm/rev)	(mm)	DRY	WET
BK350	100 to 450	up to 0.2	up to 1.0	●	○

Cutting edge preparation according to processing purposes



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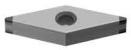
MEGA TECH METALWORK

Lineup: Negative insert

Shape	Item number	BK310	BK320	BK350	Wiper	Length of Edge mm	corner R mm	No. of corners	IC mm	S mm
	CNGA120404PQT01020	●		●		2.3	0.4	4	12.7	4.76
	CNGA120404PQF (sharp edge)	●				2.3				
	CNGA120408PQT01020	●		●		2.2	0.8			
	CNGA120408PQS01020		●			2.2				
	CNGA120408PQF (sharp edge)	●				2.2				
	CNGA120408QWS01015			●	Yes	2.2				
	CNGA120412PQT01020	●		●		2.4	1.2			
	CNGA120412PQS01020		●			2.4				
	CNGA120412PQF (sharp edge)	●				2.4				
	CNGA120416PQT01020	●				3.3	1.6			
	DNGA150404PQT01020	●		●		2.5	0.4	4		
	DNGA150404PQF (sharp edge)	●				2.5				
	DNGA150408PQT01020	●		●		2.1	0.8			
	DNGA150408PQS01020		●			2.1				
	DNGA150408PQF (sharp edge)	●				2.1				
	DNGA150412PQT01020	●		●		2	1.2			
	DNGA150612PQT01020	●				2				6.35
	DNGA150412PDF (sharp edge)	●				2	1.2	2		4.76
	SNGA120408PET01020	●				2.4	0.8	8		
	SNGA120412PET01020	●				2.4	1.2			
	TNGA160404PHT01020	●		●		2.2	0.4	6	9.525	
	TNGA160404PTF (sharp edge)	●				2.2		3		
	TNGA160408PFT01020	●		●		1.9	0.8	6		
	TNGA160408PTF (sharp edge)	●				1.9		3		
	TNGA160412PHT01020	●		●		2.4	1.2	6		
	TNGA160412PHF (sharp edge)	●				2.4				
	VNGA160404PQT01020	●		●		3.1	0.4	4		
	VNGA160408PQT01020	●		●		2.2	0.8			
	VNGA160412PQT01020	●		●		3	1.2			

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The New Era of NTK CBN Grades

MEGA TECH METALWORK

Lineup: Positive insert

Shape	Item number	BK310	BK320	BK350	Wiper	Length of Edge mm	corner R mm	No. of corners	IC mm	S mm
	CCGW060204PDF (sharp edge)	●				2.3	0.4	2	6.35	2.38
	SCGW09T304PQZ01015	●				2.4	0.4	4	9.525	3.97
	TPGN110304PTT01020	●				2.2	0.4	3	6.35	3.18
	TPGN110308PTT01020	●				2.2	0.8			
	TPGN160308PTT01020	●				2.2			9.525	
	TPGW110304PTT01020	●				2.2	0.4	3	6.35	
	TPGW110304PTT01515	●				2.2				
	TPGW110308PTT01020	●				1.9	0.8			

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Case study

H

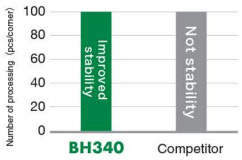
Coated CBN

BHN320

Component			Automotive parts
Insert			VNGA160408PQS01015
Grade			**BHN320**
Workpiece material			Carbon steel (HRc60)
Workpiece image			
cutting onditions	Cutting speed	(m/min)	150
	Feed	(mm/rev)	0.12
	D.O.C.	(mm)	0.2
	Coolant		WET
Result			 Conventionally, Competitor's CBN would reach the end of its tool life due to a deterioration in the machined surface roughness, but **BHN320** suppresses notch wear and achieved double tool life.

Uncoated

BH340

Component			Automotive parts
Insert			DNGA150412PQS01535
Grade			**BH340**
Workpiece material			Alloy steel (HRc62)
Workpiece image			
cutting conditions	Cutting speed	(m/min)	100
	Feed	(mm/rev)	0.1
	D.O.C.	(mm)	0.1
	Coolant		DRY
Result			 Conventional CBN frequently suffered from sudden chipping, but **BH340** can be stably machined up to a certain point.

K

Uncoated

BK310 / BK350

Component			Agriculture Parts
Insert			TNGA160408PHT01020
Grade			**BK310**
Workpiece material			Gray cast iron (FC250)
Workpiece image			
cutting onditions	Cutting speed	(m/min)	700
	Feed	(mm/rev)	0.1
	D.O.C.	(mm)	0.2
	Coolant		WET
Result			 Conventional CBN would experience chattering at the corners and reach the end of their tool life, but **BK310** maintains its sharpness and achieved 1.5 times longer tool life.

Component			Machinery parts
Insert			CNGA120408PQT01020
Grade			**BK350**
Workpiece material			Ductile cast iron (FCD450)
Workpiece image			
Cutting condition	Cutting speed	(m/min)	400
	Feed	(mm/rev)	0.05
	D.O.C.	(mm)	0.5
	Coolant		WET
Result			 Conventional CBN develop burrs in the hole and reach the end of its tool life, but **BK350** maintains its sharpness and achieves twice the tool life.

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