

BECKER

High Performance "SANDWICH" CBN

Letters represent various edge preps available, please see designation chart for cutting parameters.

With technology advancing continuously in ultrahard cutting materials, the new "SANDWICH" CBN is now available. This new design allows multiple corners or double full face negative inserts with a very strong high temperature vacuum braze. With this advancement in technology, it provides higher insert integrity and lower cost per corner.

To go along with this new technology, the "SANDWICH" inserts are being introduced in 4 grades with a specially designed coating that resists tribo-oxidation, adhesion, or diffusion. In turn the coating increases wear resistance and dissipates heat from the cutting edge more efficiently thus drastically improving tool life and surface finish.

The "SANDWICH" CBN inserts are offered in the largest selection of stocked edge preps on the market. This range of 8 different edge preps will allow complete optimization to fully suit your application needs.







CCG	W-	2N	1C

Designation			Dime	nsions					Р	BC-	10	S					PB	C-15	s					Р	BC-	255						P	BC-	405			
Designation	d	d¹	s	I	l1	r	Α	в	С	D	Е	F	G	н	A 1	вС	D	E	F	G	Η	Α	в	С	D	E	F	G	н	Α	в	с	D	Е	F	GI	н
CCGW-21.50.5-?-2MC					.126	.008		•		•	•			•				•	•					•		•		•			•		•	•	•		
CCGW-21.51-?-2MC	.250	.110	.094	.254	.110	.016	•		•	•	•	•	•	•		•		•	•				•	•	•	•		•				•	•	•	•		
CCGW-21.52-?-2MC					.094	.031			•	•	•	•	•	•		•		•	•	•	•	•		•		•	Ð		•		•		•	•	•		
CCGW-32.50.5-?-2MC					.126	.008	•	•	•	•	•	•	•	•		•	•	•	•	•				•	•	•		•			•		•	•		•	•
CCGW-32.51-?-2MC	.375	.173	.156	.382	.110	.016			•		•	•	•	•	•	•		•	•	•	•		•	•	•	•		•	•	•	•	•	•	•	•	•	•
CCGW-32.52-?-2MC					.094	.031	•		•	•		•		•				•	•	•	•			•	•			•			•	•	•	•	•		•
CCGW-21.50.5W-?-2MC	250	110	004	254	.126	.008		•	•	•	•	•		•		•		•	•			•	•	•	•							•	•	•	•		
CCGW-21.51W-?-2MC	.250	.110	.094	.254	.110	.016	•		•		•	•	•			•		•	•	•				•	•	•	Ð						•	•	•	•	•
CCGW-32.51W-?-2MC	275	170	150	202	.126	.016	•	•		•		•	•			•		•	•	•											•	•	•	•	•		
CCGW-32.52W-?-2MC	.375	.1/3	.156	.382	.110	.031			•	•	•	•		•		•		•	•			•	•	•	•	•	Ð			•	•	•	•	•	•	•	
Ordering Example: CCGW-	32.51W	-D-2M0	C PBC-10)S																									<i>.</i>								

W= Wiper Edge





Letters represent various edge preps available, please see designation chart for cutting parameters.

CNGA-4SC

Designation			Dime	nsions					F	РВС	-10	S					Р	BC-	159	5					Р	BC	-25	s					Р	BC-	40	s		
Designation	d	d¹	s	I	ľ	r	A	В	С	D	Е	F	G	Н	Α	В	С	D	Ε	F	G	н	Α	в	С	D	E	F	G	н	Α	в	С	D	Ε	F	G	Н
CNGA-431-?-4SC					.110	.016	•				٠	٠	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•		•	•
CNGA-432-?-4SC	.500	.202	.187	.508	.098	.031	•	•	٠	•	٠	•	٠		•	•	•	•	•	•	•	•	•	•	٠	•	•	•	•		•	•	•	•	•	•	•	•
CNGA-433-?-4SC					.087	.047	•			•	٠	•	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•	•	•	•
CNGA-431W-?-4SC	500	202	107	F 00	.110	.016	•				٠	٠	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•		•	•
CNGA-432W-?-4SC	.500	.202	.187	.508	.098	.031	•	•	٠	•	٠	•	٠		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•

Ordering Example: CNGA-432-F-4SC PBC-40S W= Wiper Edge





CNGA-SE

Designation			Dime	nsions					P	BC-	109	s				PB	C-1	55					PB	:-25	s					PE	BC-4	IOS			
Designation	d	d1	s	I	ľ	r	Α	В	С	D	Е	F	G H	Α	В	CI	DE	F	G	Н	Α	в	C D	E	F	G	н	Α	в	С	D	E F	G	H	ł
CNGA-432-?-SE	500	202	100	F10		.031	٠		•						•			•	•			•	•		•					•	•	•	•	•	,
CNGA-433-?-SE	.500	.202	.190	.510 -		.047	•		•						•	e	Ð	•	•			•	•		•					•			•	•	,
Ordering Example: CNGA-4	132-D-SI	E PBC-1	55						Let	tters	s rep	pres	ent va	riou	s ed	ge pr	eps	avail	able	, ple	ease	see	desig	natio	on cl	hart	for	cutt	ing	para	ame	ters.			





DCGW-2MC

Designation			Dime	nsions					Р	BC-	-10	s				Р	BC-	155	;					РВС	:-25	s					Р	BC	-40	S		
Designation	d	d¹	s	I	ľ	r	Α	в	С	D	Ε	F	G H	A	в	С	D	E	F	G	н	A E	3 0	D	E	F	G	Н	Α	в	С	D	Ε	F	G	Η
DCGW-21.50.5-?-2MC					.134	.008	•		•	•	•	•			•	•	•	•	•				•	•	٠	•			•	•		•	•	•	•	•
DCGW-21.51-?-2MC	.250	.110	.094	.305	.118	.016	•		•	•	•	•	•		•	•	•	•	•	•	•			•	٠	•	٠			•	•	•	•	•	•	•
DCGW-21.52-?-2MC					.102	.031		•		•	•	•	•	•		•	•	•	•	•	•			•	٠	•	•		•		•	•	•	•	•	•
DCGW-32.50.5-?-2MC					.134	.008		•		•	•	•		•		•	•	•	•				•	•	٠	•	٠		•	•		•	•	•		•
DCGW-32.51-?-2MC	.375	.173	.156	.457	.118	.016	•		•	•	•	•	•		•		•	•	•	•	•			•	٠	•	٠	•	•	•	•	•	•	•	•	•
DCGW-32.52-?-2MC					.102	.031		•	•	•	•	•	•	•		•	•	•	•	•	•		D	•	٠	•		•		•	•	•	•	•	•	•
Ordering Example: DCGW-	21.51-F	-2MC P	BC-15S						Le	tter	s re	pres	sent va	ariou	is ec	lge p	orep	os av	aila	ble,	plea	se s	ee d	esig	natio	on c	hart	t for	cut	ting	g par	ram	eter	s.		

Ordering Example: DCGW-21.51-F-2MC PBC-15S





DNGA-4SC

Designation			Dime	nsions					F	PBC	-10	S				P	BC-	-155					Ρ	BC-	259	5					Ρ	BC-	40S			
Designation	d	d¹	s	T	ľ	r	A	В	С	D	Ε	F	G H	Α	В	С	D	E	FO	G H	A	в	С	D	Е	F	G	н	Α	в	С	D	E	FC	3 H	Н
DNGA-431-?-4SC	500	202	107	C10	.110	.016	•				•	•	•		•	•	•	•		•	•	•		•	•	•					•	•	•		•	Þ
DNGA-432-?-4SC	.500	.202	.187	.610	.098	.031	•		•	•	•	•	•	•	•	•	•	•		•	•	•		•	•	•	•			•	•	•	•	•		
Ordering Example: DNGA-4	431-G-4	SC PBC	-105						Le	etter	s re	pre	sent v	ariou	is ec	lge p	orep	os ava	ilab	le, p	lease	e see	des	sign	atio	n ch	nart	for	cut	ing	par	ame	ters			



RNGN-SE																												<u> </u>			_					
Designation			Dimer	nsions					PE	BC-2	105					PE	BC-	155					F	вс	-25	s					Р	BC-	40	5		
Designation	d	d¹	s	Т	ľ	r	A	в	C	D	E	F	G H	Α	В	С	D	EF	: 0	i H	A	в	С	D	Ε	F	G	н	Α	в	С	D	Е	F	G	н
RNGN-090300-?-SE	.375		.125				•		•		•				•		•					•		٠		•					•		•		•	•
RNGN-120300-?-SE	.500		.125				•		•		•				•		•					•		•		•					•		•		•	•
RNGN-120400-?-SE	.500		.187				•		•		•				•		•					•		٠		•					•		•		•	•

Ordering Example: RNGN-120300-F-SE PBC-15S

Letters represent various edge preps available, please see designation chart for cutting parameters.





SNGA-8SC

Designation			Dime	nsions					P	PBC	-10	s					PI	BC-	155						PB	C-2	5S					Р	BC-	409	;		
Designation	d	d¹	s	I	ľ	r	Α	в	С	D	Ε	F	G	н	Α	В	С	D	E	F	G	H	Α	в	C I	DE	F	G	н	Α	в	С	D	Ε	F	G	Н
SNGA-432-?-8SC	500	202	107	500	.110	.031	٠	•	٠	•	•	•	٠		•	•	•	•	•	•	•		•	•				•		•	•	•	•	•	•	•	•
SNGA-433-?-8SC	.500	.202	.187	.500	.102	.047	•			•	•	•	٠			•	•	•	•	•	•		•	•)					•	•	•	•	•	•
Ordering Example: SNGA-4	32-C-89	C PBC-	10S						Le	etter	s re	pre	sen	t vai	rious	s ed	ge p	rep	s av	aila	ble,	plea	ase	see	desi	gnat	ion	cha	rt fo	r cut	tting	, par	ram	eter	s.		







SNGN-SE

																													_					
Designation			Dime	nsions					PBC	C-10	os				P	РВС-	-15	s					РВС	-259	;					PB	SC-4	0 S		
Designation	d	d¹	S	I	ľ	r	Α	в	C D	E	F	GΗ	A	В	С	D	Ε	F	G	H	A B	С	D	E	F	G	н	A	в	СГ	D	EF	G	Η
SNGN-322-?-SE	.370		.125	.375		.031	•		•	٠				•		•		•	•		•)	٠		•					•	(•	•
SNGN-422-?-SE	.500		.125	.500		.031	•		•	٠				•		•		•	•		•)	٠		•					•	(•	•
SNGN-432-?-SE	F 00		107	F.00	_	.031	•		•	٠				•		•		•	•		•)	•		•					•	(•	
SNGN-433-?-SE	.500		.187	.500		.047	•		•	٠				•		•		•	•		•)	٠		•					•	•		•	

Ordering Example: SNGN-432-F-SE PBC-25S

Letters represent various edge preps available, please see designation chart for cutting parameters.



Ordering Example: SNGN-433-D-8SC PBC-40S





PBC-40S

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TCGW-3MC Dimensions PBC-10S PBC-15S PBC-25S Designation A B C D E F G H A B C D E F G H d¹ \mathbf{I}^1 ABCDEFGH ABCDEFGH d s Т r • • • • • • TCGW-1.81.50.5-?-3MC .102 .008 • ٠ ٠ TCGW-1.81.51-?-3MC .219 .098 .094 .378 .087 .016 • • • • • • • • • • • • TCGW-1.81.52-?-3MC .071 .031 • • • • • • • • • • TCGW-21.50.5-?-3MC .114 .008 • • • • • • • • • TCGW-21.51-?-3MC .110 .094 .433 .098 .016 • • • . . . • • • • .250 • • TCGW-21.52-?-3MC .083 .031 . . . • • • • . • . . • • • TCGW-32.51-?-3MC .126 .016 • • • • • . . .375 .173 .156 .650 TCGW-32.52-?-3MC .106 .031 • • • • . . ٠ • • Ordering Example: TCGW-1.81.51-C-3MC PBC-15S Letters represent various edge preps available, please see designation chart for cutting parameters.







Designation			Dime	nsions					Р	BC-	10	s				F	РВС	-15	s					PB	C-2	25S					F	РВС	-40	s		
Designation	d	d¹	s	Т	ľ	r	Α	в	с	D	E	F	G	H A	В	С	D	E	F	G	н	Α	в	CI	DI	E F	0	6 H	A	В	С	D	Е	F	G	Н
TNGA-331-?-6SC					.110	.016	•				•	•	•		•	•	•	•	٠		•	•	•	•							•	•	٠		•	•
TNGA-332-?-6SC	.375	.150	.187	.650	.098	.031	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•)	•	•	•	•	٠	•	•	•
TNGA-333-?-6SC					.087	.047	•				•	•	•		•	•	•	•	•		•	•	•								•	•	٠	•	•	•
Ordering Example: TNGA-3	333-C-6.	SC PBC-	155						Let	tter	s re	pre	sent	vario	us e	edge	pre	ps av	vaila	ble,	ple	ase	see	desi	gna	tion	cha	rt fo	r cu	utting	g pa	ram	ete	rs.		





TNGN-SE

Designation			Dime	nsions					Р	РВС-	109	s				Р	BC-	155					PI	3C-2	55					P	BC-	40S		
Designation	d	ď	s	I	ľ	r	Α	в	с	D	Е	FC	G H	Α	в	С	D	E	FC	G H	Α	В	с	DI	E F	G	н	Α	В	С	D	E	FG	i H
TNGN-221-?-SE	250		105	422		.016	•		•		•				•		•	•				•		•	•	•				•		•		
TNGN-222-?-SE	.250		.125	.433		.031	•		•		•				•		•	•				•		•	•	•				•		•		
TNGN-331-?-SE						.016	٠		•		•				•		•	•				٠		•	•	•				•		•	•	
TNGN-331-?-SE	.375		.187	.650		.031	•		•		•				•		•					•		•	•	•				•		•	•	
TNGN-333-?-SE						.047	•		•		•				•		•	•		•		•		•	•	•				•		•	•	•
Ordering Example: TNGN-2	221-B-SI	E PBC-:	15S						Le	tters	s rep	prese	ent va	riou	s ed	lge p	orep	is ava	ilab	le, p	lease	e se	e des	igna	tion	cha	rt fo	r cu	tting	par	rame	ters		



VOCIAL DAAC

VBGW-ZIVIC																													· I		-							
Designation			Dime	nsions					P	РВС	-10	s					P	BC-	15	S					Р	вС	-25	s					F	BC	40	S		
Designation	d	d1	s	I	ľ	r	Α	В	С	D	Е	F	G	н	Α	В	С	D	Е	F	G	н	Α	в	С	D	Е	F	G	н	Α	В	С	D	Ε	F	G	н
VBGW-331-?-2MC	275	170	107	654	.122	.016	•		•	•	٠	•				•	•	•	•		•		•	•			٠	•	٠				•	•	•	•		•
VBGW-332-?-2MC	.375	.1/3	.187	.054	.098	.031			٠	•	٠	٠			•	•	•		•	•	•			•		•	٠	•	٠	•	•		•	•	•	•	•	•
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Ordering Example: VBGW-331-E-2MC PBC-10S

Letters represent various edge preps available, please see designation chart for cutting parameters.





VCGW-2MC

Designation			Dime	nsions					РВС	-10	s				Р	BC	-159	5				P	BC-	-259	s					P	BC-4	40S		
Designation	d	d¹	s	I	l ¹	r	A B	С	D	Ε	F	G H	I A	В	С	D	Ε	F	GI	4	A B	С	D	Ε	F	G	н	Α	в	с	D	E	FC	3 H
VCGW-221-?-2MC	250	114	105	427	.122	.016	•	٠	•	٠	٠			•	•	•	•		•		•			•	•	•				•	•	•	•	•
VCGW-222-?-2MC	.250	.114	.125	.437	.098	.031		٠	•	٠	•		•	•	•		•	•	•		•		•	٠	•	•	•	•		•	•	•	•	•
VCGW-331-?-2MC	075	470	407		.122	.016	•	٠	•	٠	٠			•	•	•	•		•		•			•	•	•				•	•	•	•	•
VCGW-332-?-2MC	.375	.173	.187	.654	.098	.031		٠	•	٠	•		•	•	•		•	•	•		•		•	•	•	•	•	•		•	•	•	•	•
Ordering Example: VCGW-	331-E-2	МС РВ	C-105					L	ette	rs re	pre	sent v	ariou	ıs e	dge	prep	os av	ailal	ole,	plea	se se	e de	sign	atio	on cl	hart	for	cutt	ing	para	ame	ters	5.	



VNGA-4SC

Designation			Dime	nsions					P	PBC	-10	s				Р	BC-	155					Р	BC-	255	;					Р	BC-	405	;		
Designation	d	d1	s	1	l1	r	Α	В	С	D	Ε	F	G H	A	В	С	D	Е	FC	i H	A	в	с	D	E	F	G	н	A	в	С	D	E	F	G	н
VNGA-331-?-4SC	275	150	107		.110	.016	•			٠	٠	٠	•		•	•	•	•	Ð	•	•		•	•	•			T			•	•	•	•	•	•
VNGA-332-?-4SC	.375	.150	.187	.654 .	.087	.031	٠	•	٠	•	٠	٠	•	•	•	•	•	•		•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Ordering Example: VNGA-3	331-C-4.	SC PBC-	·15S						Le	etter	s re	pre	sent v	ario	us ec	lge p	orep	os ava	ailab	le, p	lease	e see	des	signa	atio	n ch	art	for	cutti	ing	par	ame	eter	s.		





WNGA-6SC

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Designation			Dime	nsions					F	РВС	-10	S					Р	BC-	-159	S					Р	BC-	259	5					Р	BC-	405			
Designation	d	d¹	s	Т	ľ	r	A	В	С	D	E	F	G	н	Α	В	С	D	Ε	F	G	н	Α	в	С	D	Е	F	G	н	Α	в	С	D	E	F	G	Н
WNGA-431-?-6SC					.110	.016	•				٠	•	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•	(•	•
WNGA-432-?-6SC	.500	.202	.187	.335	.098	.031	•	•	•	٠	٠	•	٠		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•
WNGA-433-?-6SC					.087	.047	•			•	٠	•	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•	•	•	•
WNGA-431W-?-6SC	F 00	202	107	225	.110	.016	•				٠	•	٠			•	•	•	•	•		•	•	•		•	•	•					•	•	•	(•	•
WNGA-432W-?-6SC	.500	.202	.187	.335	.098	.031	•	•	٠	•	٠	•	٠		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Ordering Example: WNGA	-432W-0	C-6SC P	BC-105						Le	ette	rs re	epre	esen	t vai	riou	s ec	lge p	orep	os av	/aila	ble,	, ple	ease	see	e de	sign	atio	n ch	art	for	cut	ting	par	ame	eter	5.		

W= Wiper Edge

BECKER Sandwich CBN Grades & Cutting Parameters

BECKER	ISO	Composition - Performance	Application
PBC-10S	вн-с	Coated PcBN grade with a very high content of CBN (95%) in sandwich performance. Fine grain, higher wear resistance and toughness than PBC-10 in the HSC-range.	Grey cast iron (GG25) Sintered powdered alloys Super alloys
PBC-15S	вн-с	Coated PcBN grade with high content of CBN (90%) in sandwich performance. Fine grain, high wear resistance and toughness at lower cutting speed than with PBC-10S.	Nodular cast iron Grey cast iron Sintered powdered alloys Super alloys
PBC-25S	BL-C	Coated PcBN grade with low content of CBN (65%) in sandwich performance. Super fine grain, very high wear resistance, compressive strength and toughness for hard turning with continuous cut.	Hard turning, dry + wet HRc = 48 - 62 ap = 0.001" - 0.016" Ra = 8 - 125 RMS
PBC-40S	BL-C	Coated PcBN grade with low content of CBN (55%) in sandwich performance. Super fine grain, very high wear resistance, compressive strength and toughness for hard turning with continuous to extremely interrupted cut.	Hard turning, dry + wet HRc = 48 - 65 ap = 0.002" - 0.020" Ra = 4 - 125 RMS





With larger edge preps used, cutting speed is reduced and surface finish improves

BECKER Sandwich CBN Cutting Parameters









Continuous cut

conditions

Application Range for PBC-25S

With larger edge preps used, cutting speed is reduced and surface finish improves

PBC-25S, favoured in continuous cut Hardness: HRc 48 - 62 best surface finish For example: drive shaft HRc 60, Mat: 4145 Steel Insert Used: CNGA-432-E-4SC PBC-25S Super-finishing: Vc = 585 SFM, ap = 0.010", f = 0.004 ipr Surface finish: RMS = 7.2





PBC-40S, favoured in interrupted cut Hardness: HRc 48 - 65 highest tool life For example: Gear HRc 58,

Mat: 4130 Steel Insert Used: CNGA-432-G-4SC PBC-40S Super-finishing: Vc = 750 SFM, ap = 0.0087", f = 0.007 ipr Surface finish: 16 RMS

Check out our complete range of ultra-hard cutting materials:





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