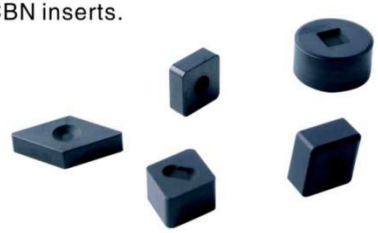
New Technologies for CBN Inserts

• Chip Breaker

Newly developed chip breaker of CBN inserts further impoves cutting performance and widens application of CBN inserts.

• Fastening Dimple

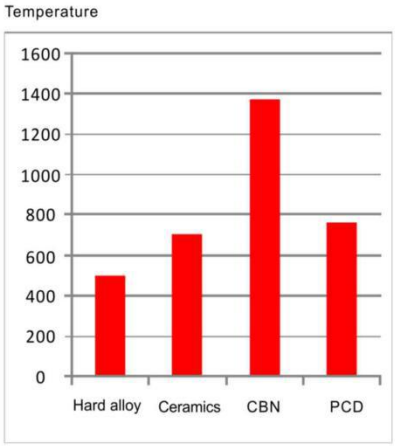
RHCNC has improved fastening and positioning reliability of CBN inserts, realized multi-direction cutting （eg:profiling） according to workpiece shape，and enhanced CBN inserts cutting performance by adopting international advanced technology to realize fastening dimple in round, square or other special shapes on CBN inserts.



• Coating Technology

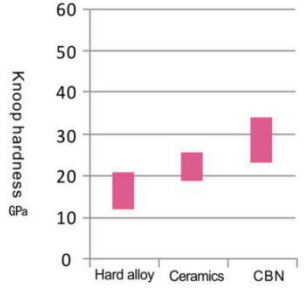
RHCNC has newly developed various CBN intert coating technologies for different workpiece materials,which can increase insert’s lifetime by 20%-200%

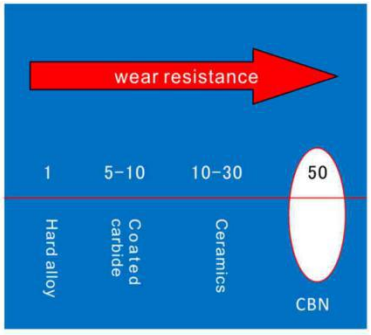
The Red Hardness Contrast of Main Materials



When cutting temperature reaches 800℃, carbide, ceramic, PCD and other cutting tools will lost normal cutting performance, while the red hardness of CBN is over 800℃, the cutting speed of CBN cutting tools is 2-5 times higher than that of carbide, ceramic cutting t ools, so CBN cutting tool has outstanding efficiency.

The Hardness and Wear Resistance Contrast of Main Cutting Tool Material





The wear resistance of CBN is 5-10 times higher than that of coated carbide, 3-5 times higher than that of ceramic, with outstanding advantage of long lifetime

The Superiority Contrast of RHCNC Innovative CBN Superhard Cutting Tools

Influenced by previous product quality and application technology,CBN leaves people with some traditional concepts.	The superiority of RHCNC innovative CBN superhard cutting tool
1.Hard and fragile, only confined to finishing.	The impact resistance of RHCNC innovative CBN superhard cutting tools achieved revolutionary improvement, it can not only achieve high-speed and high-efficient finishing machine in precision machine tools, but also can achieve heavy load, interrupted and numerous rough machining on ordinary machine tools.
2.Very expensive.	RHCNC is committed to the whole industry chain and large scale self-production from CBN material to cutting tools,making CBN cutting tools become universal and popular industrial product.
3.Grades are corresponding to specific processing materials.	The same grade of RHCNC Innovative CBN superhard cutting tools can process a variety of materials, and have good universality.
4.Can not add cutting coolant.	RHCNC innovative CBN superhard cutting tools not only can be applied for dry cutting, but also can be added cutting fluids.
5.No need for coating.	The lifetime of insert is increased by 20%-50% due to RHCNC innovative coating technology.

With the whole industry chain, the advantages of professional technological innovation and focused, meticulous workflow, relying on the world-class equipments, and more than 200 patents technology throughout all aspects of product manufacturing, RHCNC can guarantee that each cutting tool has unmatched performance and quality.

RHCNC

The Application of RHCNC Innovative CBN Superhard Cutting Tools in Automotive Industry

RHCNC

Application Cases of RHCNC Innovative CBN Ultrahard Cutting Tool in Automotive Industry

workpiece name：engine cylinder
cutting tool：milling insert D125 Z=12+2
inserts：FBN 6025 SNEN090412ENS-M08
SNEX120412ZZ
cutting parameters：ap=0.5mm fz=0.10 dry cutting
machining quality：Ra1.2

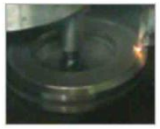
inserts comparison	feeding speed	efficiency	lifetime
A European brand CBN insert	2142mm/min	60seconds/pc	120pcs/edge
RHCNC FBN	3670mm/min	40seconds/pc	140pcs/edge

The efficiency of RHCNC FBN insert is 1.5 times higher than that of some European brand CBN insert, and lifetime is 1.2 times higher.

workpiece name：top and bottom surface of engine cylinder
cutting tool：surface milling inserts D125 Z=14
inserts：FBN6025 SNEN090412ENS-M08
cutting parameters：ap=2.5mm fz=0.12 dry cutting
machining quality：Ra3.2

inserts comparison	feeding speed	efficiency	lifetime
A European brand coated carbide insert	1670mm/min	90seconds/pc	230pcs/edge
RHCNC FBN	3428mm/min	40seconds/pc	400pcs/edge

The efficiency of RHCNC FBN insert is 2.25 times higher than that of some European brand coated carbide insert, and lifetime is 1.7 times higher.



workpiece name：brake disc
workpiece material：HT250 HB170-210
selected inserts：FBN6200 CNGN120712
cutting parameters：ap= 2 mm f=0.5mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
a Japanese carbide coated	180m/min	50seconds/pc	45 pcs/edge
RHCNC FBN	450m/min	20seconds/pc	220pcs/edge

The efficiency of RHCNC FBN insert is 2.5 times higher than that of some Japanese brand coated carbide insert, and lifetime is 4.9 times higher.

workpiece name：gear
workpiece material：20CrMnTi HRC58-65
selected inserts：FBK9550 TNGA160408
cutting parameters：ap=0.2mm f=0.15 dry cutting

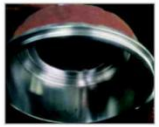
inserts comparison	cutting speed Vc	efficiency	lifetime
ceramic insert	140mm/min	1.5min/pcs	36pcs/edge
RHCNC FBN	160mm/min	1.3min/pcs	288pcs/edge

The efficiency RHCNC FBN-BK insert is 1.1 times higher than that of ceramic insert, and lifetime is 8 times higher.

workpiece name：brake disc
workpiece material：HT250 HB170-210
selected inserts：FBN6200 SCMN0904AN
cutting parameters：ap=0.3mm f=0.2mm/r

inserts comparison	cutting speed Vc	lifetime
CBN from other factory	800m/min	75pcs/edge
RHCNC FBN	1000m/min	100pcs/edge

The efficiency of RHCNC FBN insert is 1.25 times higher than that of CBN from other factory, and lifetime is 1.3 times higher.



workpiece name：brake drum
workpiece material：HT250 HB170-210
selected inserts：FBN6200 CNMN120720
cutting parameters：ap=3mm f=0.5mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
A Japanese brand coated carbide insert	150m/min	90seconds/pc	25pcs/edge
RHCNC FBN	320m/min	40seconds/pc	120pcs/edge

The efficiency of RHCNC FBN insert is 2.25 times higher than that of some Japanese brand coated carbide insert, and lifetime is 4.8 times higher.

workpiece name：damping pulley
workpiece material：HT250 HB220-260
selected inserts：FBN6200 CNGA120412
cutting parameters：ap=0.5mm f=0.25mm/r
dry cutting

inserts comparison	cutting speed Vc	efficiency	lifetime
a Japanese carbide coated	280m/min	55seconds/pc	55pcs/edge
RHCNC FBN	520m/min	35seconds/pc	200pcs/edge

The efficiency of RHCNC FBN insert is 1.5 times higher than that of some Japanese brand coated carbide insert, and lifetime is 3.6 times higher.

workpiece name：cylinder liner
workpiece material：boron castiron HB270-300
selected inserts：FBN6200 SNGA120412
cutting parameters：ap=0.3mm f=0.2mm/r dry cutting

inserts comparison	cutting speed Vc	efficiency	lifetime
A Japanese brand coated carbide insert	480m/min	39seconds/pc	26pcs/edge
RHCNC FBN	880m/min	21seconds/pc	100pcs/edge

The efficiency of RHCNC FBN insert is 1.85 times higher than that of some Japanese brand coated carbide insert, and lifetime is 3.8 times higher.

workpiece name：flywheel
workpiece material：HT250 HB220-260
selected inserts：FBN6200 WNGA080412
cutting parameters：ap=1.5mm f=0.3mm/r dry cutting

inserts comparison	cutting speed Vc	efficiency	lifetime
a Japanese carbide coated	180m/min	2min/pcs	35pcs/edge
RHCNC FBN	400m/min	45seconds/pc	140pcs/edge

The efficiency of RHCNC FBN insert is 2.6 times higher than that of some Japanese brand coated carbide insert, and lifetime is 4 times higher.

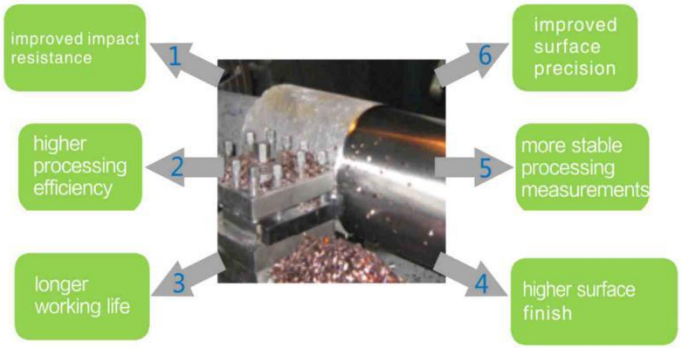
workpiece name：crankshaft
workpiece material：42CrMo HRC42-47
selected inserts：FBN8300 DNGA110408
cutting parameters：ap=0.3mm f=0.1mm/r

inserts comparison	cutting speed Vc	lifetime
A European brand CBN insert	170m/min	25pcs/edge
RHCNC FBN	170m/min	35pcs/edge

The efficiency of RHCNC FBN insert is 1.4 times higher than that of some European brand CBN insert, and lifetime is 1.5 times higher.

RHCNC

Advantages For Turning High Hardness Alloy Cast Iron by Using RHCNC Innovative CBN Ultrahard Cutting Tools



Application Cases of RHCNC Innovated CBN Ultrahard Cutting Tools in Metallrugical Roller Machining

workpiece material：high carbon steel
hardness HSD72
insert：FBN6500 SNMN150720
cutting parameters：ap=5mm f=0.4mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
ceramic insert	10m/min	3hour/pcs	0.5pcs/edge
RHCNC FBN	55m/min	1hour/pcs	1pcs/edge

The efficiency of RHCNC FBN insert is 3 times higher than that of ceramic insert, and lifetime is 2 times higher.

workpiece material：high chromium alloy castiron
hardness HSD78
insert：FBN6500 BL12K1-B
cutting parameters：ap=2mm f=0.2mm/r

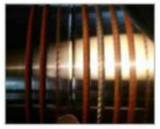
inserts comparison	cutting speed Vc	efficiency	lifetime
carbide insert	10m/min	24hour/pcs	6棱/edge
RHCNC FBN	50m/min	4hour/pcs	24棱/edge

The efficiency of RHCNC FBN insert is 6 times higher than that of carbide insert, and lifetime is 4 times higher.

workpiece material：high nickel chromium alloy castiron
hardness HSD75
insert：FBN6500 SNMN201020
cutting parameters：ap=4mm f=0.6mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
carbide	5m/min	15hour/pcs	1/4pcs/edge
RHCNC FBN	35m/min	1.5hour/pcs	1pcs/edge

The efficiency of RHCNC FBN insert is 10 times higher than that of carbide insert, and lifetime is 4 times higher.



workpiece material：cast high speed steel
hardness HSD88
insert：FBN8000 RCMX120700
cutting parameters：ap=6mm f=0.2mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
carbide	5m/min	6min/groove	6groove/edge
RHCNC FBN	30m/min	2min/groove	24groove/edge

The efficiency of RHCNC FBN insert is 3 times higher than that of carbide insert, and lifetime is 4 times higher.

workpiece material：34CrNiMo hardness：HRC62
insert：FBN6500 SNMN201020
cutting parameters：ap=3mm f=0.5mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
carbide insert	15m/min	65min/pcs	1pcs/edge
RHCNC FBN	52m/min	20min/pcs	2pcs/edge

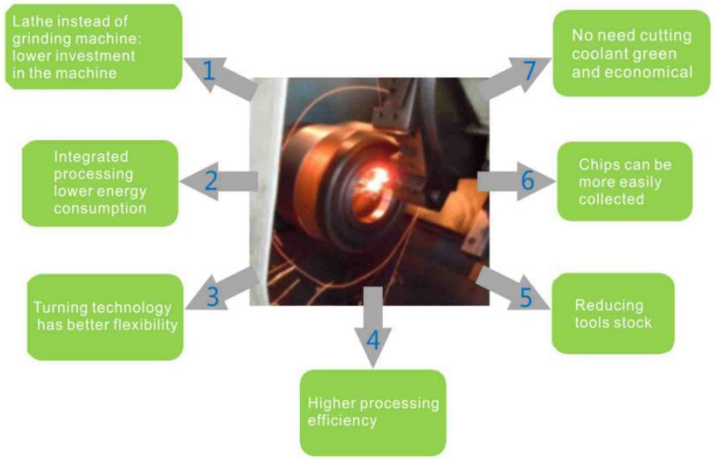
The efficiency of RHCNC FBN insert is 3.25 times higher than that of carbide insert, and lifetime is 2 times higher.

workpiece material：WC roll collar hardness HRA88
insert：FBN6200 SNMN120720
cutting parameters：ap=0.5mm f=0.3mm/r

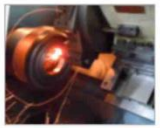
inserts comparison	cutting speed Vc	efficiency	lifetime
ceramic insert	10m/min	20min/pcs	2pcs/edge
RHCNC FBN	20m/min	10min/pcs	4pcs/edge

The efficiency of RHCNC FBN insert is 2 times higher than that of carbide insert, and lifetime is 2 times higher.

RHCNC Innovative CBN Superhard Cutting Tools Advantages of "Turning instead of Grinding" on Finishing Hardened Steel



Application Cases of RHCNC Innovative CBN Superhard Cutting Tools in Gear and Bear Industry



workpiece name：gear
workpiece material：20CrMnTi HRC58-63
selected insert：FBK9550 CCGW09T304
cutting parameters：ap=0.1mm f=0.07mm/r dry cutting

inserts comparison	cutting speed Vc	efficiency	machining cost
grinding	35m/min	2min/pcs	0.3RMB/pcs
RHCNC FBK	120m/min	0.2min/pcs	0.1RMB/pcs

The efficiency of RHCNC FBK insert is 10 times higher than that of grinding machining, and machining cost is one third of it.

workpiece name：bear
workpiece material：Gr15 HRC55-61
selected insert：FBS8300 CNGA120408
cutting parameters：ap=0.12mm f=0.07mm/r dry cutting

inserts comparison	cutting speed Vc	efficiency	lifetime
Other cBN	110m/min	1min/pcs	40pcs/edge
RHCNC FBS	120m/min	1min/pcs	50pcs/edge

The efficiency of RHCNC FBS insert is 1.1 times higher than that of CBN from other factory, and lifetime is 1.25 times higher.

workpiece name：gear shaft
workpiece material：40Cr HRC48-55
selected insert：FBK9540 CNGA120408
cutting parameters：ap=0.15mm f=0.07mm/r dry cutting

inserts comparison	cutting speed Vc	lifetime
CBN from other factory	120m/min	50pcs/edge
RHCNC FBK	150m/min	60pcs/edge

The efficiency of RHCNC FBK insert is 1.25 times higher than that of CBN from other factory, and lifetime is 1.25 times higher.

workpiece name：gear
workpiece material：20CrMnTi HRC58-65
selected insert：FBK9540 CNGA120408
cutting parameters：ap=0.3mm f=0.1mm/r dry cutting

inserts comparison	cutting speed Vc	lifetime
CBN from other factory	180m/min	200pcs
RHCNC FBK	220m/min	240pcs

The efficiency of RHCNC FBK insert is 1.2 times higher than that of CBN from other factory, and lifetime is 1.2 times higher.

workpiece name：Large gear (Φ12000mm)
workpiece material：40CrMo HB280-360
selected insert：FBN8000 SNMN201020
cutting parameters：rough：ap= 4mm f=0.7mm/r
finishing：ap=0.5mm f=0.6mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
some European brand coated carbide insert	20m/min	20hour/pcs	1/4pcs/edge
RHCNC FBN	50m/min	2hour/pcs	2pcs/edge

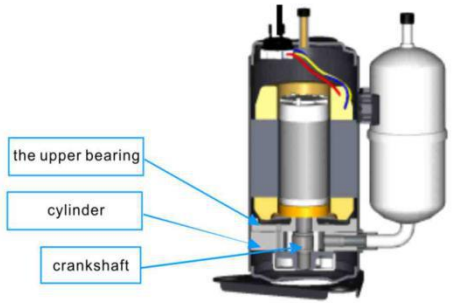
The efficiency of RHCNC FBN insert is 10 times higher than that of some European brand coated carbide insert, and lifetime is 8 times higher.

workpiece name：transmission shaft
workpiece material：20CrMo HRC60-65
selected insert：FBK9560 VNGA160408
cutting parameters：ap=0.1mm f=0.15mm/r

inserts comparison	cutting speed Vc	lifetime
CBN from other factory	120m/min	100pcs
RHCNC FBK	140m/min	145pcs

The efficiency of RHCNC FBK insert is 1.2 times higher than that of CBN from other factory, and lifetime is 1.45 times higher.

Application Cases of RHCNC Innovative CBN Superhard Cutting Tools in Air Condition Compressor Industry



workpiece name：upper bear
workpiece material：HT200 HB170-210
insert：FBN6200 WNGA080408
cutting parameters：ap=2.5mm f=0.25mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
a Japanese carbide coated	380m/min	72seconds/pc	100pcs/edge
RHCNC FBN	570m/min	45seconds/pc	500pcs/edge

The efficiency of RHCNC FBN insert is 1.6 times higher than that of some Japanese brand coated carbide insert, and lifetime is 5 times higher.

workpiece name：air cylinder
workpiece material：HT200 HB170-210
insert：FBN6200 WNGA080412
cutting parameters：ap=2mm f=0.2mm/r
wet cutting

inserts comparison	cutting speed Vc	efficiency	lifetime
a Japanese carbide coated	260m/min	58seconds/pc	20pcs/edge
RHCNC FBN	400m/min	37seconds/pc	80pcs/edge

The efficiency of RHCNC FBN insert is 1.5 times higher than that of some Japanese brand coated carbide insert, and lifetime is 4 times higher.

Application Cases of RHCNC Innovative CBN Superhard Cutting Tools in Machine, Mining and Construction Machinery Industry

workpiece name：machine table
workpiece material：HT250 HRC50-55
selected insert：FBN6025 SNEN1207ENS-M08
cutting parameters：ap=1.5mm fz=0.1mm/z dry cutting

inserts comparison	cutting speed Vc	efficiency	machining cost
grinding	35m/min	1hour/pcs	20RMB/pcs
RHCNC FBN	185m/min	0.25hour/pcs	15RMB/pcs

The efficiency of RHCNC FBN insert is 4 times higher than that of grinding machining, and machining cost is one third of it.

workpiece name：rotary support
workpiece material：42CrMo HRC47-55
selected insert：FBN8000 RCMX090700V
cutting parameters：ap=1mm f=0.25mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
ceramic insert	120m/min	1.2hour/pcs	4pcs/edge
RHCNC FBN	150m/min	1hour/pcs	12pcs/edge

The efficiency of RHCNC FBN insert is 1.2 times higher than that of ceramic insert, and lifetime is 3 times higher.

workpiece name：chute board
workpiece material：bead weld HRC52-62
selected insert：FBN6025 RNMN120700
cutting parameters：ap=0.5mm
fz=0.1mm/z dry milling

inserts comparison	cutting speed Vc	lifetime
ceramic insert	150m/min	1pcs/edge
RHCNC FBN	180m/min	2pcs/edge

The efficiency of RHCNC FBN insert is 1.2 times higher than that of ceramic insert, and lifetime is 2 times higher.

workpiece name：rolling mortar wall
workpiece material：high manganese steel HB240
selected insert：FBN6500 SNMN150720
cutting parameters：ap=3mm f=0.5mm/r

inserts comparison	cutting speed Vc	efficiency	lifetime
CBN from other factory	40m/min	70min/pcs	1.5pcs/edge
RHCNC FBN	50m/min	50min/pcs	2pcs/edge

The efficiency of RHCNC FBN insert is 1.4 times higher than that of CBN from other factory, and lifetime is 1.3 times higher.

Innovative CBN Superhard Cutting Tools

Form	Grade	Machining Mode	Workpiece Material	Features	Application Industry
FBN	6000	Roughing and finishing	Excellent comprehensive performance: ● Be suitable for grey cast iron, etc. ● Be suitable for hardened steel, etc.	Impact resistance ↑ Wear resistance ↓	Break disc, Belt pulley, Gear, Bear.
	6500	Heavy roughing	Excellent impact and wear resistance ● Be suitable for roughing high hardness alloy cast-iron, gray cast iron, etc. ● Be suitable for roughing high manganese steel, etc.		Metallurgical roll, Pump, Mining machinery, etc.
	6200	Roughing and finishing	Excellent wear resistance ● Be suitable for roughing and finishing of gray cast iron, etc. ● Be suitable for roughing and finishing of high hardness alloy cast iron, etc.		Brake drum, Brake disc, Metallurgical roll, etc.
	8000	Interrupted roughing	Excellent impact resistance ● Be suitable for roughing hardened steel, etc. ● Be suitable for roughing surface coated material, etc.		Big gear, Slewing bearing industry, etc.
	8300	Semi-finishing and finishing	● Be suitable for semi-finishing and finishing of hardened steel, etc.		Gear industry, Bearing industry, etc.

The Grades and Application Industry of RHCNC Innovative FBK Superhard Cutting Tools

Form	Grade	Machining Mode	Workpiece Material	Features	Cutting Speed (SFM)	Cutting Fluid
FBK	7515	Continuous, interrupted finishing	Gray cast iron	Impact resistance ↑ Wear resistance ↓	1969-3937	Dry cutting Wet cutting
	7525	Continuous, interrupted finishing	Gray cast iron		1969-3937	Dry cutting Wet cutting
			Powder metallurgy		295-656	
	7535	Continuous, interrupted finishing	Powder metallurgy		295-656	Dry cutting
FBK	9545	High speed continuous finishing	Hardened steel	Impact resistance ↓ Wear resistance ↑	591-984	Dry cutting Wet cutting
	9555	Continuous light interrupted finishing	Ball bearing steel Cemented steel		328-574	Dry cutting Wet cutting
	9535	Continuous medium interrupted finishing and semi-finishing	Ball bearing steel Cement steel		459-722	Dry cutting
	9565	Continuous hard interrupted finishing	Cemented steel		328-656	Dry cutting

The Grades and Application Industry of RHCNC Innovative CBN Superhard Milling Cutting Tools

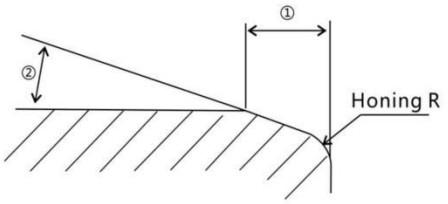
Form	Grade	Application Features	Application Fields	Application Industries
FBN	6025	Roughing finishing	● Be suitable for rough miling, semi finishing milling and finish milling of gray cast iron. ● Be suitable for rough miling, semi finishing milling and finish milling of hard cast iron. ● Be suitable for rough miling, semi finishing milling and finish milling of hardened steel.	Automobile, Roll machine tool, Mould and other industries
FBK	7525	Finishing	● Be suitable for finishing milling of hard cast iron and gray cast iron.	

RHCNC

Cutting Edge Expression Method

Single Chamfering S 020 20

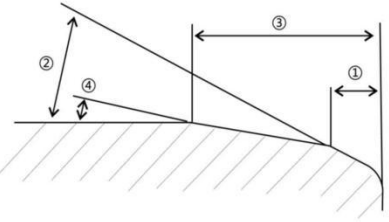
① ②



① chamfering width, 020 0.2mm
② chamfering angle, 20 20°

Double Chamferings + Honing P 200 20 / 010 30

③ ④ ① ②



① first chamfering width
② first chamfering angle
③ total chamfering width
④ second chamfering angle

Code	Cutting edge form	Drawing	Main function
F	Sharp cutting edge condition		Sharp cutting edge can help to improve the roughness of the machining surface and is difficult to produce chatter marks. Because oversharp can cause worse durability, only choose sharp cutting edge when machine general cast iron and require a high roughness. The sharp cutting edge is often used for finishing turning gray cast iron brake discs.
E	Honing		Honing can help to reduce micro-chipping and improve the integrity of the cutting edge. The heavier of the honing, the more intact of the cutting edge, the better of the strength, but the cutting resistance and cutting heat would increase. The heavy honing cutting edge is a better choice, if the system rigidity and machine power are satisfied, or in interrupted cutting machining environment.
T	Chamfering		The chamfering helps to improve the impact resistance of the cutting edge. Compared with S cutting edge, chamfers help to improve the quality of the machined surface and ensure dimensional stability.
S	Chamfering + Honing		The strength of this cutting edge and comprehensive performance are the best, which is widely applied in CBN cutting tools. Turning hard alloy, cast iron, mostly use S01020, turning gray cast iron mostly use S02020, turning hardened steel mostly use S01020.
K	Double chamferings		Recommended when processing large cut depth of interrupted turning, it can get better impact resistance performance .
P	Double chamferings + Honing		Recommended when processing large cut depth of interrupted turning, it can get better impact resistance performance than double chamferings only .

Naming Standard

Shape code	Inserts	Shape	Angle
S	□	square	90°
T	△	regular triangle	60°
C	◇	rhombus	80°
D			55°
E			75°
M			86°
V			35°
W	⬠	chimb triangle	80°
H	⬡	regular hexagon	120°
O	○	regular octagon	135°
P	⬠	regular pentagon	108°
L	▭	rectangle	90°
A	▱	parallelogram	85°
B			82°
N/K			55°
R	○	round	-

Insert shape

Shape code	m (mm)	ØI.C (mm)	S (mm)	Shape code	m (mm)	ØI.C (mm)	S (mm)
A	±0.005	±0.025	±0.025	J	±0.005	±0.05- ±0.13	±0.025
F	±0.005	±0.013	±0.025	K	±0.013	±0.05- ±0.13	±0.025
C	±0.013	±0.025	±0.025	L	±0.025	±0.05- ±0.13	±0.025
H	±0.013	±0.013	±0.025	M	±0.08 - ±0.18	±0.05- ±0.13	±0.13
E	±0.025	±0.025	±0.025	N	±0.08 - ±0.18	±0.05- ±0.13	±0.025
G	±0.025	±0.025	±0.13	U	±0.13- ±0.38	±0.08- ±0.25	±0.13

Tolerance

R C G X

C N G A

Insert side clearance angle	
Code	Clearance angle
N	0°
A	3°
B	5°
C	7°
P	11°
D	15°
E	20°
F	25°
G	30°
O	others

Chip breaker and clamping method

Code	With or without hole	Chip breaker	Sketch	Code	With or without hole	Chip breaker	Sketch
N	without	without		B	70°-90° counter bore on single side	without	
R		single side with chip breaker		H		single side with chip breaker	
F		both sides with chip breaker		C	70°-90° counter bore on both sides	without	
A	round straight hole	without		J		both sides with chip breaker	
M		single side with chip breaker		O	concave	round	
G		both sides with chip breaker					
W	40°-60° counter bore on single side	without		S		square	
T		single side with chip breaker					
Q	40°-60° counter bore on both sides	without		L		long strip	
U		both sides with chip breaker					
				X	Other Clamping or chip breaker types, the drawing and more information need to be provided.		

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Naming Standard

Incircle	Cutting edge length C	D	S	T	V	W	R
3.97				06			03
4.76				08			04
5.0							05
5.56				09	09		05
6.0							06
6.35	06	07	06	11	11	04	06
7.94	08	09					07
8.0							08
9.525	09	11	09	16	16	06	09
10.0							10
12.0							12
12.7	12	15	12	22	22	08	12
15.875	16		15	27			15
16.0		19					16
19.05	19		19	33			19
20.0							20
25.0	25	25					25
25.4			25				25
31.75							31
32							32

Insert size

Code	Thickness (mm)	Code	Thickness (mm)
01	1.59	06	6.35
T1	1.98	07	7.94
02	2.38	08	8.0
T2	2.58	09	9.52
03	3.18	10	10.0
T3	3.97	11	11.11
04	4.76	12	12.0
05	5.56	12	12.70

Thickness(mm)

Code	Corner radius (mm)
00	sharp or round insert
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
32	3.2
X	other

Corner radius

12 07 00 Y135

12 04 08 KC

Sign optional

Main cutting edge forms
Cutting direction or chip breaker form

Pyramid or cone bottom

V : pyramid bottom

V means pyramid bottom, 135 means the pyramid angle is 135°
It can be blank if pyramid angle is 120°
For example: the model of insert with 120°pyramid angle is RCMX120700V
It can also be written as RCMX120700V120
But it must be written out clearly if the pyramid angle is not 120°
For example: the model of insert with 135°pyramid angle is RCMX120700V135

Y : cone bottom

Y means cone bottom, 135 means the cone angle is 135°
It can be blank if cone angle is 120°
For example: the model of insert with 120°cone angle is RCMX120700Y
It can also be written as RCMX120700Y120
But it must be written out clearly if the cone angle is not 120°
For example: the model of insert with 135°cone angle is RCMX120700Y135

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Order Demonstration and Instruction for RHCNC Innovative CBN Superhard Cutting Tools

FBN	6500	C04	RCGX120700Y135		S05020
FBK	9540	C05	CNGA120408KC	-2S	S02020
Structure P4	Grade P5	Coatings	Specifications and models P7-8	Effective cutting edge length of FBK inserts. S:standard edge L:longer edge L35:effective edge length 3.5mm L127:effevtive edge length 12.7mm	Edge forms P6

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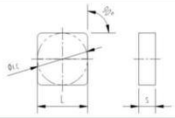
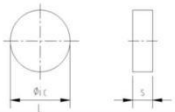
RHCNC Innovative CBN Superhard Cutting Tools

Turning

RHCNC FBN Series Solid CBN Cutting Tools



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
SNMN 090304	9	9.525	3.18	0.4	S02020 S05020 S10020		●			
SNMN 090308	9	9.525	3.18	0.8			●			
SNMN 090312	9	9.525	3.18	1.2			●			
SNMN 090404	9	9.525	4.76	0.4			●			
SNMN 090408	9	9.525	4.76	0.8			●			
SNMN 090412	9	9.525	4.76	1.2			●			
SNMN 120404	12	12.7	4.76	0.4		●	●	●	●	
SNMN 120408	12	12.7	4.76	0.8		●	●	●	●	
SNMN 120712	12	12.7	7.94	1.2		●	●	●	●	
SNMN 150704	15	15.875	7.94	0.4		●		●	●	
SNMN 150708	15	15.875	7.94	0.8		●		●	●	
SNMN 201020	20	20	10	2.0		●			●	
SNMN 201024	20	20	10	2.4		●			●	



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
RNMN 060400	6	6.35	4.76	0	S02020 S05020 S10020					
RNMN 090300	9	9. 525	3. 18	0				●		
RNMN 090400	9	9.525	4.76	0				●		
RNMN 120400	12	12.7	4.76	0		●		●	●	
RNMN 120600	12	12.7	6.35	0		●		●	●	
RNMN 120700	12	12.7	7.94	0		●		●	●	
RNMN 150700	15	15.875	7.94	0		●			●	
RNMN 160700	16	16	7.94	0		●			●	
RNMN 190700	19	19.05	7.94	0		●			●	
RNMN 200700	20	20	7.94	0		●			●	
RNMN 201000	20	20	10	0		●			●	
RNMN 250600	25	25.4	6.35	0						
RNMN 250700	25	25.4	7.94	0						
RNMN 251000	25	25.4	10	0						
RNMN 251200	25	25.4	12	0						

Note:● Preference
Cutting edge condition can be customized

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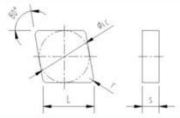
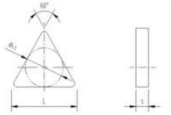
RHCNC FBN Series Solid CBN Cutting Tools



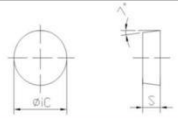
Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
CNMN 090404	9	9.525	4.76	0.4	S02020			●		●
CNMN 090408	9	9.525	4.76	0.8				●		●
CNMN 090412	9	9.525	4.76	1.2				●		●
CNMN 120404	12	12.7	4.76	0.4		●		●	●	●
CNMN 120408	12	12.7	4.76	0.8		●		●	●	●
CNMN 120412	12	12.7	4.76	1.2		●		●	●	●
CNMN 120704	12	12.7	7.94	0.4		●		●	●	●
CNMN 120708	12	12.7	7.94	0.8		●		●	●	●
CNMN 120712	12	12.7	7.94	1.2		●		●	●	●
CNMN 120804	12	12.7	8.0	0.4		●		●	●	●
CNMN 120808	12	12.7	8.0	0.8		●		●	●	●
CNMN 120812	12	12.7	8.0	1.2		●		●	●	●
CNMN 160708	16	15.875	7.94	0.8		●			●	
CNMN 160712	16	15.875	7.94	1.2		●			●	
CNMN 160716	16	15.875	7.94	1.6		●			●	



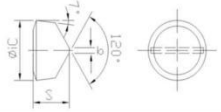
Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
TNGN110304	11	6.35	3.18	0.4	S01020 S02020			●		
TNGN110308	11	6.35	3.18	0.8				●		
TNGN110312	11	6.35	3.18	1.2				●		
TNGN160404	16	9.25	4.76	0.4				●		
TNGN160408	16	9.25	4.76	0.8				●		
TNGN160412	16	9.25	4.76	1.2				●		

Note:● Preference
Cutting edge condition can be customized

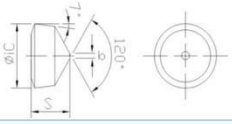
RHCNC FBN Series Solid CBN Cutting Tools



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
RCMN 060400	6	6.35	4.76	0	S02020 S05020 S10020					
RCMN 090400	9	9.525	4.76	0		●				
RCMN 090600	9	9.525	6.35	0		●				
RCMN 120600	12	12.7	6.35	0		●				
RCMN 120700	12	12.7	7.94	0		●				
RCMN 150700	15	15.875	7.94	0		●				
RCMN 190700	19	19.05	7.94	0						



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	b		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
RCMX 060400V	6	6.35	4.76	0.8	S02020 S05020 S10020 S20020	●				●
RCMX 060600V	6	6.35	6.35	0.8		●				●
RCMX 090700V	9	9.525	7.94	1		●			●	●
RCMX 120700V	12	12.7	7.94	2		●			●	●
RCMX 151000V	15	15.875	10.0	2		●			●	
RCMX 191000V	19	19.05	10.0	2						
RCMX 201200V	20	20.0	12.0	2						
RCMX 251200V	25	25.4	12.0	2						



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	b		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
RCMX060400Y	6	6.35	4.76	0.6	S02020 S05020 S10020 S20020					
RCMX060500Y	6	6.35	5.0	0.6						
RCMX060700Y	6	6.35	7.94	0.6						
RCMX090700Y	9	9.525	7.94	1		●				
RCMX120700Y	12	12.7	7.94	1.2		●				

Note:● Preference
Cutting edge condition can be customized

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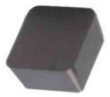
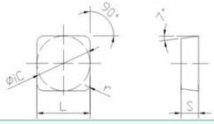
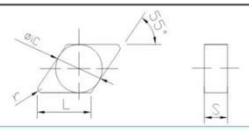
RHCNC FBN Series Solid CBN Cutting Tools

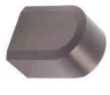


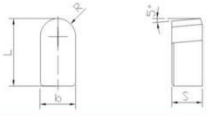


Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
SCGN 090304	9	9.525	3.18	0.4	T01020 S01020 S02020					
SCGN 090308	9	9.525	3.18	0.8						
SCGN 090312	9	9.525	3.18	1.2						
SCGN 090404	9	9.525	4.76	0.4						
SCGN 090408	9	9.525	4.76	0.8				●		
SCGN 090412	9	9.525	4.76	1.2				●		



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
DNUN110404	11	9.525	4.76	0.4	S01020 S02020			●		
DNUN110408	11	9.525	4.76	0.8				●		
DNUN110412	11	9.525	4.76	1.2				●		
DNUN110604	11	9.525	6.35	0.4				●		
DNUN110608	11	9.525	6.35	0.8				●		
DNUN110612	11	9.525	6.35	1.2				●		

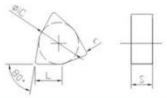




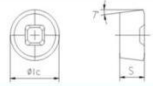
Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	R	b	L	S		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
STB10K1	4.6	9.2	17	8.0	S10020	●			●	
BL12K1-B	5.55	11.1	17	8.0		●			●	
BL14K1-B	6.5	13.0	17	8.0		●			●	

Note:● Preference
Cutting edge condition can be customized

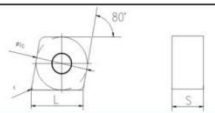
RHCNC FBN Series Solid CBN Cutting Tools



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
WNMN 080404	8	12.7	4.76	0.4	S02020			●		
WNMN 080408	8	12.7	4.76	0.8				●		
WNMN 080412	8	12.7	4.76	1.2				●		
WNMN 080604	8	12.7	6.35	0.4				●		
WNMN 080608	8	12.7	6.35	0.8				●		
WNMN 080612	8	12.7	6.35	1.2				●		



Type	Dimension (mm)			Standard cutting edge	Grades				
ISO	L	Φ i.c	s		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
RNMS090600	9	9.525	6.35	S02020	●				
RNMS120700	12	12.7	7.94		●				
RNMS150700	15	15.875	7.94		●				
RNMS201000	20	20	10		●				



Type	Dimension (mm)				Standard cutting edge	Grades				
ISO	L	Φ i.c	s	r		FBN6500	FBN6000	FBN6200	FBN8000	FBN8300
CNMO120704	12	12.7	7.94	0.4	S02020			●		
CNMO120708	12	12.7	7.94	0.8				●		
CNMO120712	12	12.7	7.94	1.2				●		

Note:● Preference
Cutting edge condition can be customized

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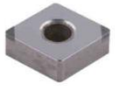
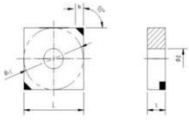
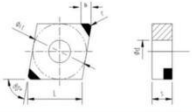
RHCNCFBK Series Super Finishing Cutting Tools

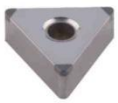


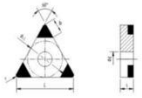


Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
SNGA120402-2S	12	12.7	4.76	5.16	0.2	2.5	T01020	●				●		
SNGA120404-2S	12	12.7	4.76	5.16	0.4	2.5	T02020	●				●		
SNGA120408-2S	12	12.7	4.76	5.16	0.8	2.3	S01020	●				●		
SNGA120412-2S	12	12.7	4.76	5.16	1.2	2.3	S02020	●				●		



Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
CNGA120402-2S	12	12.7	4.76	5.15	0.2	2.5	T01020	●				●		
CNGA120404-2S	12	12.7	4.76	5.15	0.4	2.5	T02020	●				●		
CNGA120408-2S	12	12.7	4.76	5.15	0.8	2.3	S01020	●				●		
CNGA120412-2S	12	12.7	4.76	5.15	1.2	2.3	S02020	●				●		

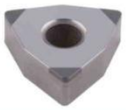


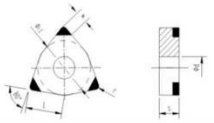


Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
TNGA160402-3S	16	9.525	4.76	3.81	0.2	2.3	T01020	●				●		
TNGA160404-3S	16	9.525	4.76	3.81	0.4	2.3	T02020	●				●		
TNGA160408-3S	16	9.525	4.76	3.81	0.8	2.0	S01020	●				●		
TNGA160412-3S	16	9.525	4.76	3.81	1.2	1.7	S02020	●				●		
TNGA160416-3S	16	9.525	4.76	3.81	1.6	1.5		●				●		

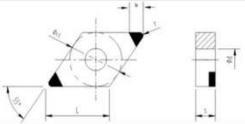
Note:● Preference
Cutting edge condition can be customized

RHCNC FBK Series Super Finishing Cutting Tools

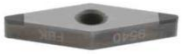


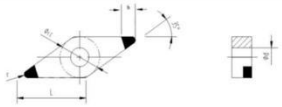


Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
WNGA060402-3S	6	9.525	4.76	3.81	0.2	2.6	T01020	●				●		
WNGA060404-3S	6	9.525	4.76	3.81	0.4	2.5		●				●		
WNGA060408-3S	6	9.525	4.76	3.81	0.8	2.3	T02020	●				●		
WNGA080402-3S	8	12.7	4.76	5.16	0.2	2.6		●				●		
WNGA080404-3S	8	12.7	4.76	5.16	0.4	2.5	S01020	●				●		
WNGA080408-3S	8	12.7	4.76	5.16	0.8	2.3		●				●		
WNGA080412-3S	8	12.7	4.76	5.16	1.2	2.2	S02020	●				●		



Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
DNGA110402-2S	11	9.525	4.76	3.81	0.2	2.5	T01020	●				●		
DNGA110404-2S	11	9.525	4.76	3.81	0.4	2.5		●				●		
DNGA110408-2S	11	9.525	4.76	3.81	0.8	2.1	T02020	●				●		
DNGA150402-2S	15	12.7	4.76	5.16	0.2	2.5		●				●		
DNGA150404-2S	15	12.7	4.76	5.16	0.4	2.5	S01020	●				●		
DNGA150408-2S	15	12.7	4.76	5.16	0.8	2.1		●				●		
DNGA150412-2S	15	12.7	4.76	5.16	1.2	1.8	S02020	●				●		





Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
VNGA160402-2S	16	9.525	4.76	3.81	0.2	2.8	T01020	●				●		
VNGA160404-2S	16	9.525	4.76	3.81	0.4	2.8	T02020	●				●		
VNGA160408-2S	16	9.525	4.76	3.81	0.8	2.0	S01020	●				●		
VNGA160412-2S	16	9.525	4.76	3.81	1.2	1.7	S02020	●				●		

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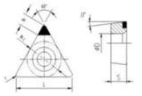
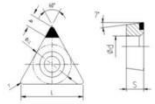


Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
TPGW090202	9	5.56	2.38	2.5	0.2	2.2	T01020	●				●		
TPGW090204	9	5.56	2.38	2.5	0.4	2.1		●				●		
TPGW090208	9	5.56	2.38	2.5	0.8	1.8		●				●		
TPGW110202	11	6.35	2.38	2.8	0.2	2.2		●				●		
TPGW110204	11	6.35	2.38	2.8	0.4	2.1		●				●		
TPGW110208	11	6.35	2.38	2.8	0.8	1.8		●				●		
TPGW110302	11	6.35	3.18	3.3	0.2	2.2	T02020	●				●		
TPGW110304	11	6.35	3.18	3.3	0.4	2.1		●				●		
TPGW110308	11	6.35	3.18	3.3	0.8	1.8		●				●		
TPGW160304	16	9.525	3.18	4.4	0.4	2.1	S01020	●				●		
TPGW160308	16	9.525	3.18	4.4	0.8	1.8		●				●		
TPGW16T302	16	9.525	3.97	4.4	0.2	2.2		●				●		
TPGW16T304	16	9.525	3.97	4.4	0.4	2.1		●				●		
TPGW16T308	16	9.525	3.97	4.4	0.8	1.8	S02020	●				●		
TPGW16T312	16	9.525	3.97	4.4	1.2	1.5		●				●		
TPGW160404	16	9.525	4.76	4.4	0.4	2.1		●				●		
TPGW160408	16	9.525	4.76	4.4	0.8	1.8		●				●		

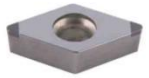
RHCNC FBK Series Super Finishing Cutting Tools

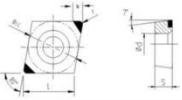


Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
TCGW090202	9	5.56	2.38	2.5	0.2	2.2	T01020	●				●		
TCGW090204	9	5.56	2.38	2.5	0.4	2.1		●				●		
TCGW090208	9	5.56	2.38	2.5	0.8	1.8		●				●		
TCGW110202	11	6.35	2.38	2.8	0.2	2.2		●				●		
TCGW110204	11	6.35	2.38	2.8	0.4	2.1	T02020	●				●		
TCGW110208	11	6.35	2.38	2.8	0.8	1.8		●				●		
TCGW110302	11	6.35	3.18	2.8	0.2	2.2		●				●		
TCGW110304	11	6.35	3.18	2.8	0.4	2.1	S01020	●				●		
TCGW110308	11	6.35	3.18	2.8	0.8	1.8		●				●		
TCGW16T302	16	9.525	3.97	4.4	0.2	2.2		●				●		
TCGW16T304	16	9.525	3.97	4.4	0.4	2.1	S02020	●				●		
TCGW16T308	16	9.525	3.97	4.4	0.8	1.8		●				●		
TCGW16T312	16	9.525	3.97	4.4	1.2	1.5		●				●		

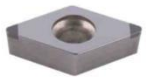
RHCNC

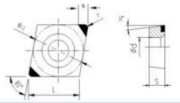
RHCNC FBK Series Super Finishing Cutting Tools





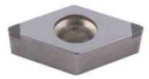
Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
CCGW060202	6	6.35	2.38	2.8	0.2	1.9	T01020	●				●		
CCGW060204	6	6.35	2.38	2.8	0.4	1.9		●				●		
CCGW060208	6	6.35	2.38	2.8	0.8	1.7		●				●		
CCGW09T302-2S	9	9.525	3.97	4.4	0.2	2.5	T02020	●				●		
CCGW09T304-2S	9	9.525	3.97	4.4	0.4	2.5		●				●		
CCGW09T308-2S	9	9.525	3.97	4.4	0.8	2.3		●				●		
CCGW09T312-2S	9	9.525	3.97	4.4	1.2	2.2	S01020	●				●		
CCGW120402-2S	12	12.7	4.76	5.5	0.2	2.5		●				●		
CCGW120404-2S	12	12.7	4.76	5.5	0.4	2.5		●				●		
CCGW120408-2S	12	12.7	4.76	5.5	0.8	2.3	S02020	●				●		
CCGW120412-2S	12	12.7	4.76	5.5	1.2	2.2		●				●		

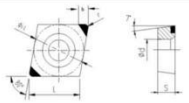




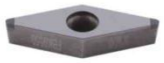
Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
CPGW060202	6	6.35	2.38	2.8	0.2	1.9	T01020	●				●		
CPGW060204	6	6.35	2.38	2.8	0.4	1.9		●				●		
CPGW060208	6	6.35	2.38	2.8	0.8	1.7		●				●		
CPGW090302-2S	9	9.525	3.18	4.4	0.2	2.5	T02020	●				●		
CPGW090304-2S	9	9.525	3.18	4.4	0.4	2.5		●				●		
CPGW090308-2S	9	9.525	3.18	4.4	0.8	2.3		●				●		
CPGW090312-2S	9	9.525	3.18	4.4	1.2	2.2	S01020	●				●		
CPGW09T302-2S	9	9.525	3.97	4.4	0.2	2.5		●				●		
CPGW09T304-2S	9	9.525	3.97	4.4	0.4	2.5		●				●		
CPGW09T308-2S	9	9.525	3.97	4.4	0.8	2.3	S02020	●				●		
CPGW09T312-2S	9	9.525	3.97	4.4	1.2	2.2		●				●		

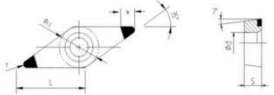
RHCNC FBK Series Super Finishing Cutting Tools



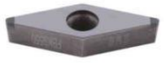


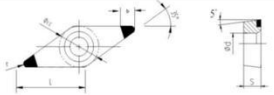
Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
DCGW070202	7	6.35	2.38	2.8	0.2	2.4	T01020	●				●		
DCGW070204	7	6.35	2.38	2.8	0.4	2.4		●				●		
DCGW070208	7	6.35	2.38	2.8	0.8	2	T02020	●				●		
DCGW11T302-2S	11	9.525	3.97	4.4	0.2	2.4		●				●		
DCGW11T304-2S	11	9.525	3.97	4.4	0.4	2.4	S01020	●				●		
DCGW11T308-2S	11	9.525	3.97	4.4	0.8	2	S02020	●				●		





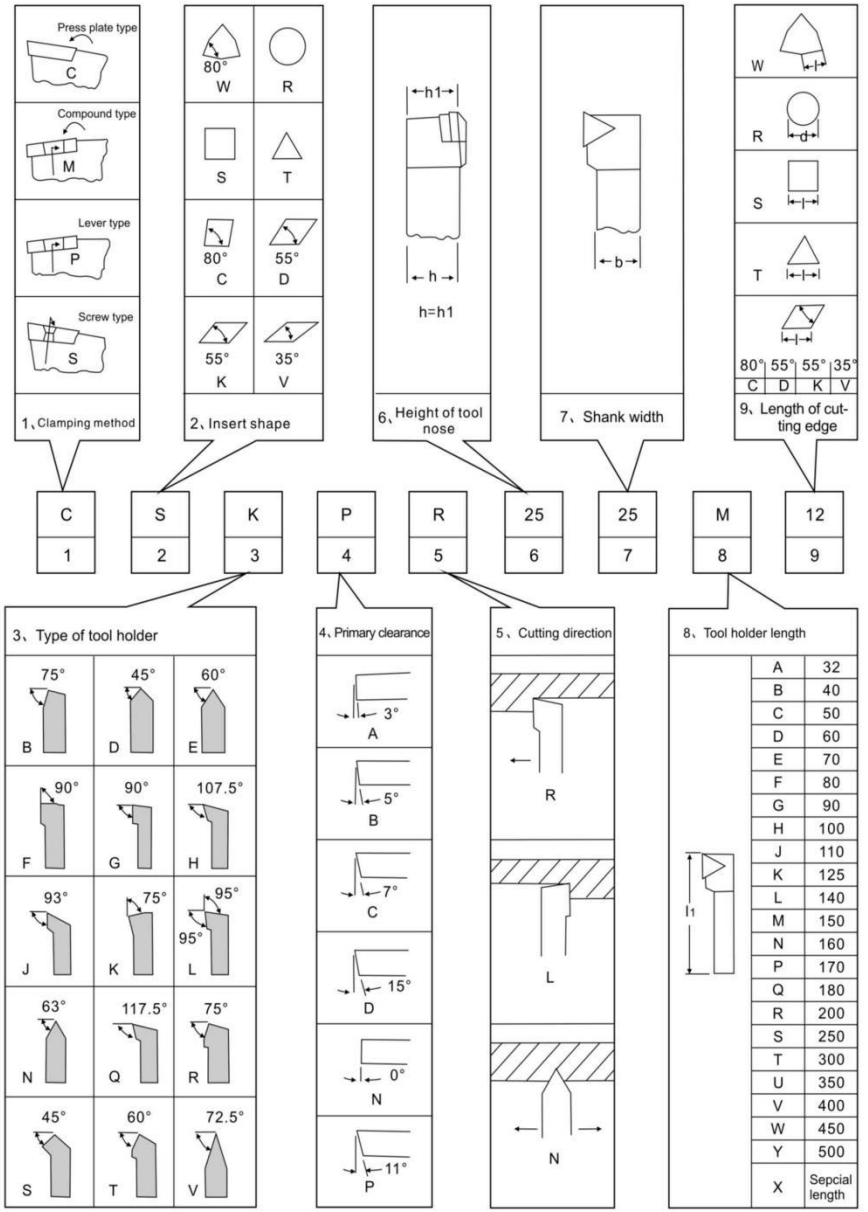
Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
VCGW110302	11	6.35	3.18	2.8	0.2	2.8	T01020	●				●		
VCGW110304	11	6.35	3.18	2.8	0.4	2.8		●				●		
VCGW110308	11	6.35	3.18	2.8	0.8	2.0	T02020	●				●		
VCGW110312	11	6.35	3.18	2.8	1.2	1.7		●				●		
VCGW160402-2S	16	9.525	4.76	4.4	0.2	2.8	S01020	●				●		
VCGW160404-2S	16	9.525	4.76	4.4	0.4	2.8		●				●		
VCGW160408-2S	16	9.525	4.76	4.4	0.8	2.0	S02020	●				●		
VCGW160412-2S	16	9.525	4.76	4.4	1.2	1.7		●				●		





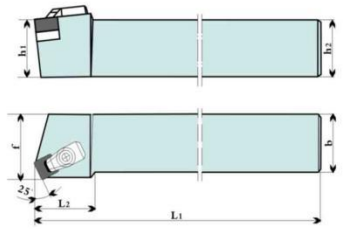
Type	Dimension (mm)						Standard cutting edge	Grades						
ISO	L	Φ i.c	s	Φ d	r	b		7515	7525	7535	9535	9545	9555	9565
VBGW110302	11	6.35	3.18	2.8	0.2	2.8	T01020	●				●		
VBGW110304	11	6.35	3.18	2.8	0.4	2.8		●				●		
VBGW110308	11	6.35	3.18	2.8	0.8	2.0	T02020	●				●		
VBGW110312	11	6.35	3.18	2.8	1.2	1.7		●				●		
VBGW160402-2S	16	9.525	4.76	4.4	0.2	2.8	S01020	●				●		
VBGW160404-2S	16	9.525	4.76	4.4	0.4	2.8		●				●		
VBGW160408-2S	16	9.525	4.76	4.4	0.8	2.0	S02020	●				●		
VBGW160412-2S	16	9.525	4.76	4.4	1.2	1.7		●				●		

ISO Code of External Holder With Inderable Insert



25° Tool Holder

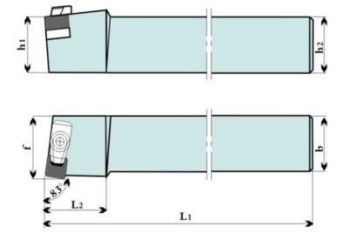
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSXNR/L3232P12-25	32	32	170	42	35	YS12M4	S12Y	SNMN1207
CSXNR/L3232P15-25	32	32	170	47	36.2	YS15M4	S15Y	SNMN1507
CSXNR/L3535R12-25	35	35	200	40	40	YS12M4	S12Y	SNMN1207
CSXNR/L3535R15-25	35	35	200	40	40	YS15M4	S15Y	SNMN1507
CSXNR/L4040S12-25	40	40	250	48	45	YS15M4	S15Y	SNMN1507
CSXNR/L4040S20-25	40	40	250	53	45	YS20M4	S20Y	SNMN2010
CSXNR/L5050T15-25	50	50	300	48	55	YS15M4	S15Y	SNMN1507
CSXNR/L5050T20-25	50	50	300	53	55	YS20M4	S20Y	SNMN2010

83° Tool Holder

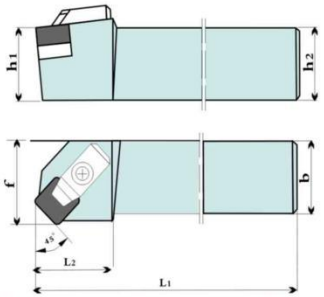
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSXNR/L3232P12-83	32	32	170	36	36	YS12M4	S12Y	SNMN1207
CSXNR/L3540R15-83	35	40	200	35	45	YS15M4	S15Y	SNMN1507
CSXNR/L4040S15-83	40	40	250	40	45	YS15M4	S15Y	SNMN1507
CSXNR/L5050T20-83	50	50	300	42	55	YS20M4	S20Y	SNMN2010

45° Tool Holder

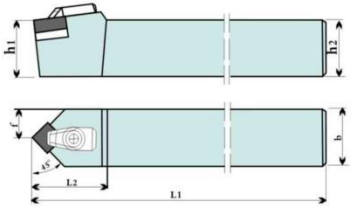
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSSNR/L2525P12	25	25	170	32	32	YS12M4	S12Y	SNMN1204
CSSNR/L3232P12	32	32	200	35	36	YS12M4	S12Y	SNMN1207
CSSNR/L3235R15	32	32	200	42	39.2	YS15M4	S15Y	SNMN1507
CSSNR/L4040S12	40	40	250	40	44.3	YS12M4	S12Y	SNMN1207
CSSNR/L4040S15	40	40	250	45	45	YS15M4	S15Y	SNMN1507
CSSNR/L4040S20	40	40	250	48	46	YS20M4	S20Y	SNMN2010
CSSNR/L5050T15	50	50	300	44	55	YS20M4	S15Y	SNMN1507
CSSNR/L5050T20	50	50	300	50	58	YS20M4	S20Y	SNMN2010

Middle –placed 45° Tool Holder

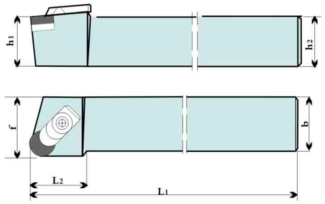
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSDNN3232P12	32	32	170	48	16	YS12M4	S12Y	SNMN1207
CSDNN4040S15	40	40	250	52	20	YS15M4	S15Y	SNMN1507
CSDNN5050T20	50	50	300	58	25	YS20M4	S20Y	SNMN2010

Arc Tool Holder

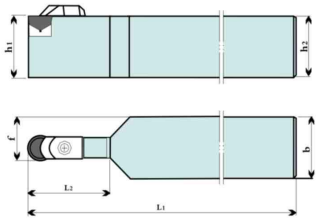
Application



Type/specifications	h1=h2	b	L1	L2	f			
CRGNR/L3232P12	32	32	170	40	37	GR12M4	R12G	RNMN120400
CRGNR/L3232P15	32	32	170	40	37	GR15M4	R15G	RNMN150700
CRGNR/L4040S20	40	40	250	42	45	GR20M4	R20G	RNMN200700
CRGNR/L5050T20	50	50	300	42	55	GR20M4	R20G	RNMN200700
CRGNR/L5050T20	50	50	300	42	55	GR20M4	R20G	RNMN201000
CRGNR/L5050T25	50	50	300	46	55	GR25M4	R25G	RNMN251000

Middle-Placed Tool Holder

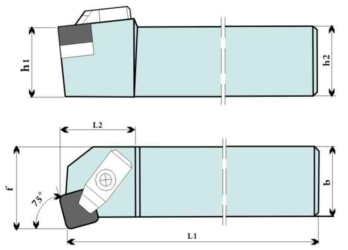
Application



Type/specifications	h1=h2	b	L1	L2	f			
CRDCN3225P09-A	32	25	170	29	17.2	RCV09	R09Y	RCGX090700
CRDCN3225P12-A	32	25	170	33	18.8	RCV12	R12Y	RCGX120700
CRDCN4040S15-ID	40	40	250	38	27.9	RCV15	R15Y	RCGX151000
CRDCN5040T19-ID	50	40	300	45	29.5	RCV19	R19Y	RCGX191000
CRDCN5040T20-ID	50	40	300	45	30	RCV20	R20Y	RCGX201200
CRDCN5040T25-ID	50	40	300	45	30	RCV25	R25Y	RCGX251200

Front 75° Tool Holder

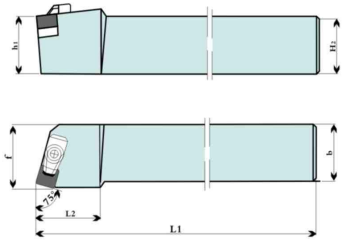
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSKNR/L3232P12	32	32	170	40	39	YS12M4	S12Y	SNMN1207
CSKNR/L3232P15	32	32	170	45	40	YS15M4	S15Y	SNMN1507
CSKNR/L4040S15	40	40	250	46	49	YS15M4	S15Y	SNMN1507
CSKNR/L4040S20	40	40	250	50	50	YS20M4	S20Y	SNMN2010
CSKNR/L5050T15	50	50	300	46	60	YS15M4	S15Y	SNMN1507
CSKNR/L5050T20	50	50	300	50	60	YS20M4	S20Y	SNMN2010

75° Tool Holder

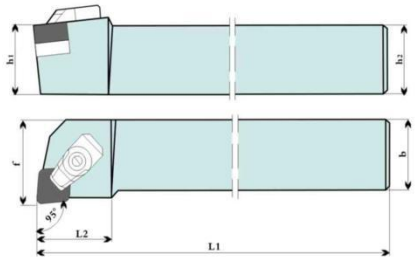
Application



Type/specifications	h1=h2	b	L1	L2	f			
CSRNR/L3232P12	32	32	170	36	36	YS12M4	S12Y	SNMN1207
CSRNR/L4040S15	40	40	250	45	45	YS15M4	S15Y	SNMN1507
CSRNR/L5050T20	50	50	300	45	56	YS20M4	S20Y	SNMN2010

95° Tool Holder

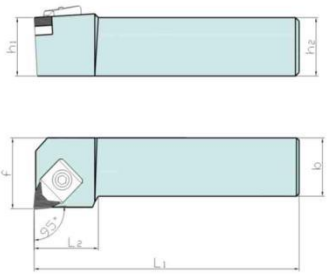
Application



Type/specifications	h1=h2	b	L1	L2	f			
CCLNR/L3232P12	32	32	170	34	36	YC12M4	C12Y	CNMN1207
CCLNR/L4040S16	40	40	250	40	45	YC16M4	C16Y	CNMN1207

95° External Holder

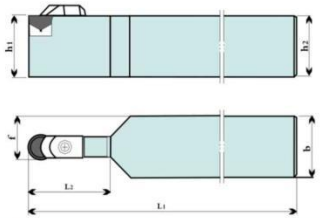
Application



Type/specifications	h1=h2	b	L1	L2	f			
CWLNR/L2525M	25	25	150	33	32	GW12M4	W12G	WNMN0804

Middle-Placed Tool Holder

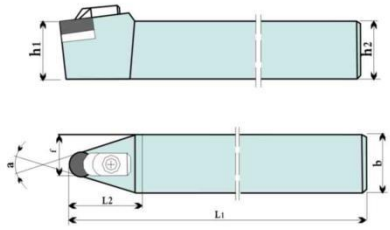
Application



Type/specifications	h1=h2	b	L1	L2	f			
CRDCN3225P09-A	32	25	170	29	17.2	RCV09	R09Y	RCGX090700
CRDCN3225P12-A	32	25	170	33	18.8	RCV12	R12Y	RCGX120700
CRDCN4040S15-ID	40	40	250	38	27.9	RCV15	R15Y	RCGX151000
CRDCN5040T19-ID	50	40	300	45	29.5	RCV19	R19Y	RCGX191000
CRDCN5040T20-ID	50	40	300	45	30	RCV20	R20Y	RCGX201200
CRDCN5040T25-ID	50	40	300	45	30	RCV25	R25Y	RCGX251200

Middle-Placed Tool Holder

Application

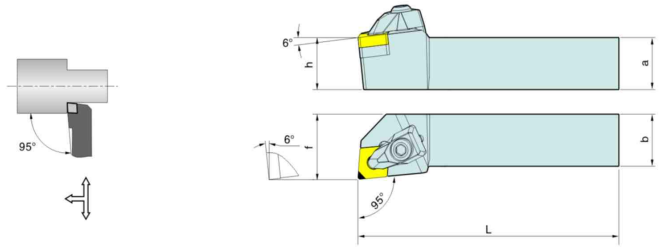


Type/specifications	h1=h2	b	L1	L2	f	a			
CRDNN3232P12	32	32	170	64	22.35	20°	GR12M4	R12G	RNMN120400
CRDNN4040S15	40	40	250	80	27.93	20°	GR15M4	R15G	RNMN150700
CRDNN5050T20	50	50	300	99	35	20°	GR20M4	R20G	RNMN201000
CRDNN3232P12	32	32	170	46	22.35	30°	GR12M4	R12G	RNMN120400
CRDNN4040S15	40	40	250	57	27.93	30°	GR15M4	R15G	RNMN150700
CRDNN5050T20	50	50	300	70	35	30°	GR20M4	R20G	RNMN201000

RHCNC Innovative CBN Superhard Cutting Tools

Common External Turning Tool Holder Series for Inserts with Hole

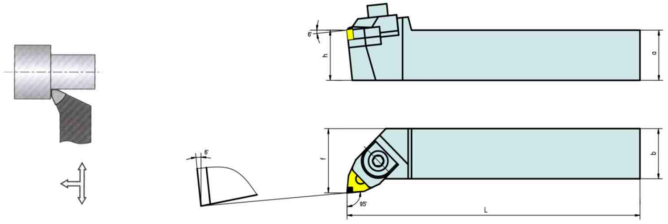
95° TCLNR/L



● Order example
1PC TCLNR 2525M12
1PC TCLNL 2525M12
·R=Right hand L=Left hand

Type	Dimension (mm)					radius	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TCLNR/L 2020 K12	20	20	125	20	25	0.8	CN○○1204○○	TC1204	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TCLNR/L 2525 M12	25	25	150	25	32								
TCLNR/L 3225 P12	32	25	170	32	32								
TCLNR/L 3232 P12	32	32	170	32	40								

95° WWLNR/L



● Order example
1PC WWLNR 2525M08
1PC WWLNL 2525M08
·R=Right hand L=Left hand

Type	Dimension (mm)					radius	Insert	Shim	Locating pin	Clamp	Clamp screw	Wrench
	a	b	L	h	f							
WWLNR/L 2020 K08	20	20	125	20	25	0.8	WN○○0804○○	Mw0804	MSPS619	MCLS2008	MS 06023	S3L\S4L
WWLNR/L 2525 M08	25	25	150	25	32							
WWLNR/L 3232 P08	32	32	170	32	40							
WWLNR/L 4040 R08	40	40	200	40	40							

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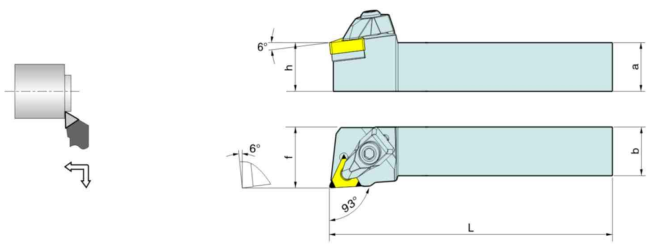
RHCNC Innovative CBN Superhard Cutting Tools

Common External Turning Tool Holder Series for Inserts with Hole

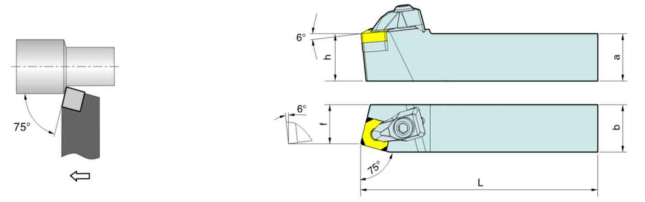
93° TTJNR/L



● Order example
1PC TTJNR 2525M16
1PC TTJNL 2525M16
·R=Right hand L=Left hand

Type	Dimension (mm)					radius	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TTJNR/L 2020 K16	20	20	125	20	25	0.8	TN○○1604○○	TT1603	B40100J	TCL03	MS 04017	SP 608	S3L\T15F
TTJNR/L 2525 M16	25	25	150	25	32								
TTJNR/L 3232 P16	32	32	170	32	40								
TTJNR/L 3232 P22	32	32	170	32	40	0.8	TN○○2204○○	TT2204	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TTJNR/L 4040 R22	40	40	200	40	50								

75° TSBNR/L



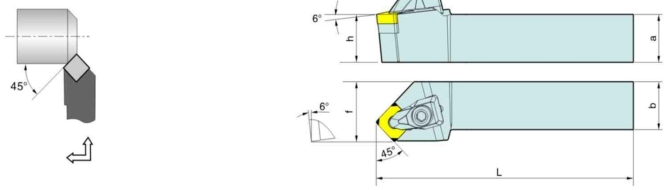
● Order example
1PC TSBNR 2525M12
1PC TSBNL 2525M12
·R=Right hand L=Left hand

Type	Dimension (mm)					radius	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TSBNR/L 2020 K12	20	20	125	20	17	0.8	SN○○1204○○	TS1204	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TSBNR/L 2525 M12	25	25	150	25	22								
TSBNR/L 3232 P12	32	32	170	32	29								

RHCNC Innovative CBN Superhard Cutting Tools

Common External Holders For Inserts With Hole

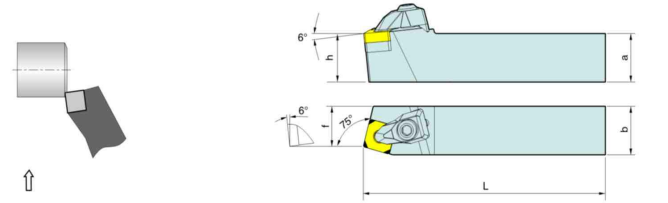
45° TSSNR/L



- Order example
  1PC TSSNR 2525M12
  1PC TSSNL 2525M12
  *R=Right hand L=Left hand
- Only tool holder

Type	Dimension (mm)					Edge	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TSSNR/L 2020 K12	20	20	125	20	25	0.8	SN○○1204○○	TS1204	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TSSNR/L 2525 M12	25	25	150	25	32								
TSSNR/L 3232 P12	32	32	170	32	40								

75° TSKNR/L



- Order example
  1PC TSKNR 2525M12
  1PC TSKNL 2525M12
  *R=Right hand L=Left hand
- Only tool holder

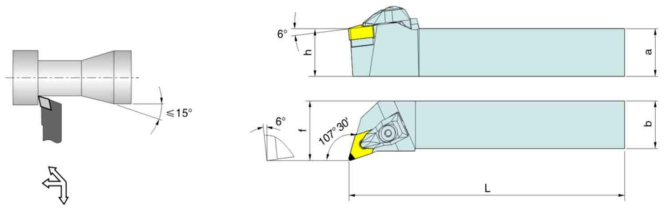
Type	Dimension (mm)					Edge	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TSKNR/L 2020 K12	20	20	125	20	25	0.8	SN○○1204○○	TS1204	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TSKNR/L 2525 M12	25	25	150	25	32								
TSKNR/L 3232 P12	32	32	170	32	40								

RHCNC

RHCNC Innovative CBN Superhard Cutting Tools

Common External Holders For Inserts With Hole

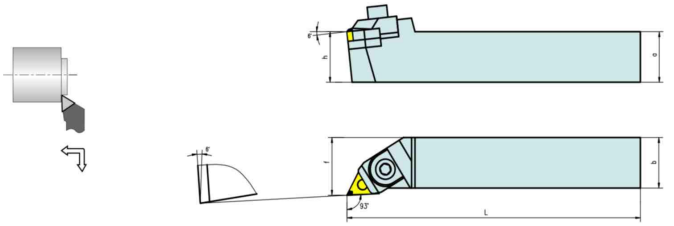
107°30′ TDQNR/L



- Order example
  1PC TDQNR 2525M11
  1PC TDQNL 2525M11
  *R=Right hand L=Left hand
- Only tool holder

Type	Dimension (mm)					Edge	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	a	b	L	h	f								
TDQNR/L 2020 K15	20	20	125	20	25	0.8	DN○○1506○○ DN○○1504○○	TD1504 TD1506	B40100J	TCL04	MS 05020	SP 713	S4L\T15F
TDQNR/L 2525 M15	25	25	150	25	32								
TDQNR/L 3232 P15	32	32	170	32	40								
TDQNR/L 4040 R15	40	40	200	40	50								

93° WTJNR/L



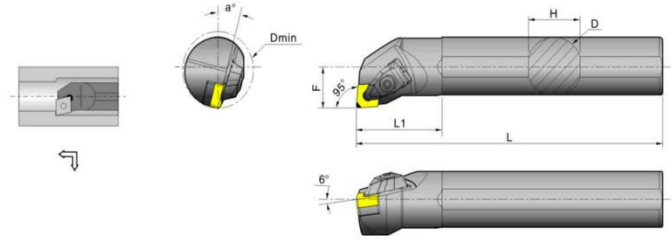
- Order example
  1PC WTJNR 2525M16
  1PC WTJNL 2525M16
  *R=Right hand L=Left hand
- Only tool holder

Type	Dimension (mm)					Edge	Insert	Shim	Locating pin	Lateral screw	Clamp	Clamp screw	Wrench
	a	b	L	h	f								
WTJNR/L 1616 K16	16	16	125	16	20	0.8	TN○○1604○○	MTS1603	MSPS515	CS 06011	MCLS1608	MS 05026	S3L\S4L
WTJNR/L 2020 K16	20	20	125	20	25								
WTJNR/L 2525 M16	25	25	150	25	32								
WTJNR/L 3232 P16	32	32	170	32	40								
WTJNR/L 3232 P16	32	32	170	32	40	0.8	TN○○2204○○	MTS2204	MSPS719	CS 06011	MCLS2210	MS 06028	S3L\S4L
WTJNR/L 4040 R16	40	40	200	40	50								

RHCNC Innovative CBN Superhard Cutting Tools

Internal Bars

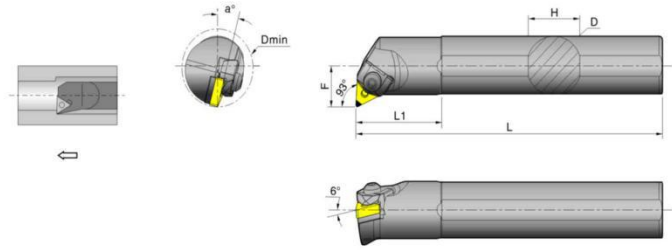
95° TCLNR/L



- Order example
  1PC S25R-D32-TCLNR-12
  1PC S25L-D32-TCLNR-12
  *R=Right hand L=Left hand
- Only tool holder

Type	Dimension (mm)						Edge	Insert	Shim	Shim screw	Clamp	Clamp screw	Spring	Wrench
	D	L	L1	F	H	Dmin								
S25R-D32-TCLNR/L-12	25	200	40	17	23	32	0.8	CN○○1204○○	–	–	TCL04	MS 05020	SP713	S4L\T15F
S32S-D40-TCLNR/L-12	32	250	50	22	30	40			TC1204	B40100J				
S40T-D50-TCLNR/L-12	40	300	55	25	37	50								
S50U-D60-TCLNR/L-12	50	350	60	33	47	60								

93° WTUNR/L



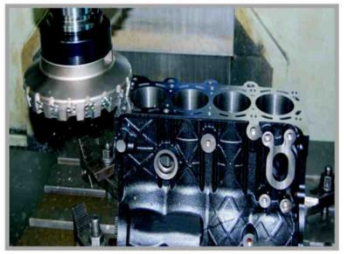
- Order example
  1PC S25R-D32-WTUNR-16
  1PC S25L-D32-WTUNR-16
  *R=Right hand L=Left hand
- Only tool holder

Type	Dimension (mm)						Edge	Insert	Shim	Locating pin	Clamp	Clamp screw	Wrench
	D	L	L1	F	H	Dmin							
S25R-D32-WTUNR/L-16	25	200	40	17	23	32	0.8	TN○○1604○○	–	MSPS 511	MCLS1608	MS 05026	S3L\S4L
S32S-D40-WTUNR/L-16	32	250	50	22	30	40			MTS1603	MSPS 514			
S40T-D50-WTUNR/L-16	40	300	55	25	37	50							
S50U-D60-WTUNR/L-16	50	350	60	33	47	60							

RHCNC

RHCNC Innovative CBN Superhard Cutting Tools

Milling

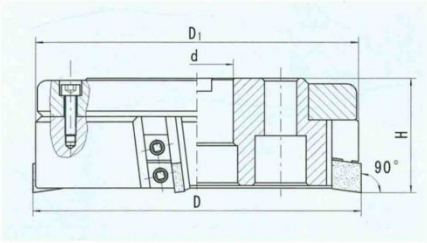


Compared with coated carbide and ceramic cutting toos, RHCNC CBN milling cutting tools used for cast iron and hardened steel show following obvious advantages:

- Faster material removal rate
- Longer tool life
- Lower comprehensive costs

RHCNC Innovative CBN Superhard Cutting Tools

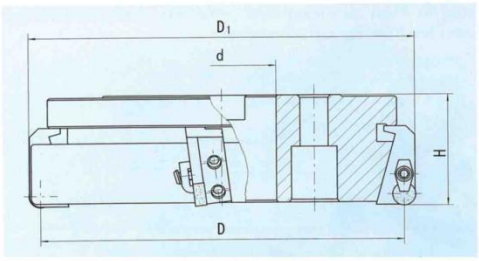
Indexable face milling cutter Kr 90°



Specification	Tooth number	Size				Insert	Spare parts			
		D	D1	H	d		Clamp	Shim	Dowel screw	Wrench
TZM125R/L	7	125	141	63	40	CNEN120712	TZMR/L-03	TZMR/L-02	GMC125-05 M10×1×22	□5.0
TZM160R/L	9	160	177	63	40					
TZM200R/L	12	200	218	63	60					
TZM250R/L	15	250	268	63	60					
TZM315R/L	18	315	333	80	60					

Face Milling Cutters

Indexable face milling cutter (Round Insert)



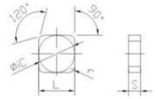
Specification	Tooth number	Size				Insert	Spare parts				
		D	D1	H	d		Clamp	Shim	Fasten screw	Fasten screw	Wrench
TRM125R/L	7	125	141	63	40	RNEN120712	TRMR/L-03	TRMR/L-02	TRM04	TRM05	□4.0
TRM160R/L	9	160	177	63	40						
TRM200R/L	12	200	218	63	60						
TRM250R/L	15	250	268	63	60						
TRM315R/L	18	315	333	80	60						

RHCNC

CBN Milling Cutters

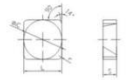
Higher CNC grinding precision, more professional milling insert shape design, and more stringent ultra-fine cutting edge grinding created excellent FUNIK CBN milling inserts.

Milling Insert



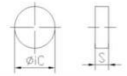
Type	Dimension (mm)				Grades	
ISO	L	Φ i.c	s	r	FBN6025	FBK7520
SNEN0903ENS	9	9.525	3.18	0.8	●	●
SNEN0904ENS	9	9.525	4.76	0.8	●	●
SNEN1207ENS	12	12.7	7.94	1.2	●	●
SNEN120712	12	12.7	7.94	1.2	●	●
SNEN19T6ENS	19	19.05	6.8	1.6	●	●

Milling Insert with Wiper



Type	Dimension (mm)				Grades	
ISO	L	Φ i.c	s	r	FBN6025	FBK7520
SNEX1203ZZ	12	12.7	3.18	1.2	●	●
SNEX1204ZZ	12	12.7	4.76	1.2	●	●

Milling Insert



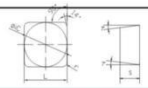
Type	Dimension (mm)				Grades	
ISO	L	Φ i.c	s	r	FBN6025	FBK7520
RNEN090300	9	9.525	3.18	0	●	●
RNEN090400	9	9.525	4.76	0	●	●
RNEN120700	12	12.76	7.94	0	●	●

Note: Cutting edge condition can be customized

CBN Milling Cutters

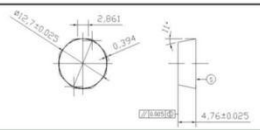
Higher CNC grinding precision, more professional milling insert shape design, and more stringent ultra-fine cutting edge grinding created excellent RHCNC CBN milling inserts.

Milling Insert 



Type	Dimension (mm)				Grades		
ISO	L	Φ i.c	s	r	FBN6500	FBN7025	
SCEN090412	9	9.525	4·76	1.2		●	
SCEN120412	12	12·7	4·76	1.2			
SCEN150712	15	15.875	7.94	1.2	●		

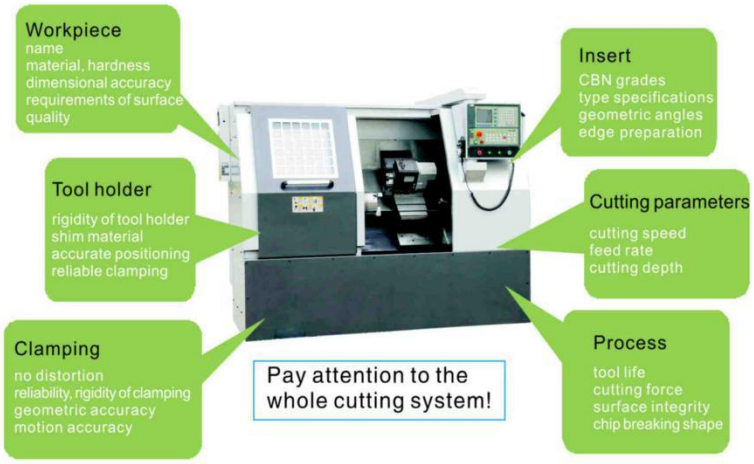
Milling Insert 



Type	Dimension (mm)		Grades		
ISO	Φ i.c	s	FBN7025		
OPHN0504ZZH-A57	12.7	4.76	●		
OPHX0504ZZH-A57	12.7	4.76	●		

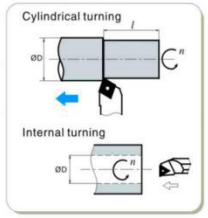
Note: Cutting edge condition can be customized

Precautions For Use



Conventional Cutting Parameter Formula

turning

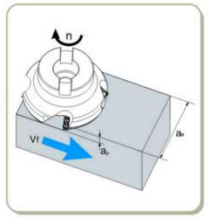


$$Vc = \frac{\pi * D * n}{1000} \quad (SFM)$$

$$f = \frac{V_f}{n} \quad (in/rev)$$

formula: Vc: cutting speed (SFM)
n: spindle speed (rev/min)
D: workpiece diameter (in)
Vf: feed rate (IPR)
f: feed amount per revolution (in/rev)

milling



$$Vc = \frac{\pi * Dc * n}{1000} \quad (SFM)$$

$$fz = \frac{V_f}{n * z} \quad (in/z)$$

formula: Vc: cutting speed (SFM)
n: spindle speed (rev/min)
Dc: nominal diameter of milling cutter (in)
Vf: feed rate (IPR)
Z: tooth number
fz: feed amount per tooth (in/z)

Precautions of Insert Installation and Replacement

- Thoroughly clean the insert and insert groove
- Check the soundness and abrasion of shim
- Check the fastening reliability of the shim
- Check whether the clamping surface of the platen is flat or not
- Ensure the insert and the positioning slot closely bonded
- Periodically replace shim, platen and all the locking screw
- Avoid using those cutter bodies with worn insert grovve
- Maintain minimum overhang of the tool holder
- Don't suddenly stop when the tool tip is not cutting out during the process

Recommended Cutting Parameters of RHCNC Innovative CBN Superhard Cutting Tools

General Cutting Parameters of RHCNC CBN Cutting Tools

Workpiece	Material	Hardness	Cutting speed (SFM)		Cutting depth (IN)		Feed rate (IPR)		Recommended grades
			min	max	min	max	min	max	
Gear	20CrMnTi	58-65HRC	328	1050	0.004	0.020	0.002	0.079	FBK
Bear	GCr15	55-65HRC	328	722	0.004	0.020	0.002	0.079	FBK\FBN
Large gear	40CrMo	310-360HB	131	394	0.020	0.197	0.008	0.039	FBN
	18CrNiMo	58-62HRC	197	394	0.012	0.039	0.004	0.012	FBN
Slewing bearing	42CrMo	55-62HRC	262	722	0.008	0.079	0.004	0.020	FBN
Brake disc	HT250	220-260HB	1640	3937	0.008	0.020	0.004	0.016	FBN
			1312	3937	0.020	0.118	0.004	0.016	FBN
Brake drum			1148	3937	0.008	0.020	0.004	0.016	FBN
			919	3937	0.020	0.118	0.004	0.016	FBN
Compressor bear			1640	3937	0.008	0.098	0.008	0.016	FBN
Cylinder liner	Boron copper cast iron	180-260HB	1640	2625	0.004	0.012	0.004	0.008	FBN/FBK
		180-260HB	492	1640	0.012	0.039	0.004	0.012	FBN/FBK
Roller	High nickel chromium	78HSD	98	164	0.039	0.315	0.020	0.059	FBN
	High chromium	75HSD	98	148	0.039	0.394			FBN
	High chromium steel	75HSD	66	197	0.039	0.394			FBN
	High speed steel	88HSD	98	197	0.012	0.118			FBN
	High carbon semi steel	70HSD	148	262	0.039	0.394			FBN
	Chilled iron	67HSD	131	197	0.039	0.394			FBN
Slurry pump	Wear resistant White cast iron	50-60HRC	164	328	0.020	0.157	0.008	0.020	FBN
Rolling mortar wall	High manganese steel	300-500HB	262	656	0.020	0.315	0.008	0.020	FBN

General Cutting Parameters of RHCNC CBN Cutting Tools

Material	Hardness of workpiece	Tool cutting edge angel Kr	Cutting speed (SFM)		Cutting depth (in)		Feed rate (in)		Cutting coolant
			min	max	min	max	min	max	
Gray cast iron	200HB	75°	1640	6562	0.020	0.197	0.004	0.008	Dry cutting
Hardened Gray cast iron	55HRC	75°	492	984	0.020	0.079	0.002	0.008	Dry cutting
Hardened steel	60HRC	75°	262	656	0.008	0.020	0.002	0.004	Dry cutting

Remarks: The specific cutting parameters should be adjusted according to the following factors: rigidity of machine tool, power, insert size and thickness, workpiece material, hardness and shape, machining allowance, insert endurance and etc.

Possible Factors Influencing CBN Tool Lifetime When Machining Gray Cast Iron

- Cast blank should be dealt with aging treatment, and the natural aging time should be more than 10 days.
- The content of ferrite in cast blank should be <10%.
- The content of sulphur should be > 0.05%.

Above factors can all shorter the lifetime of CBN inserts greatly

RHCNC

Welcome to choose RHCNC's Other Super-hard Products