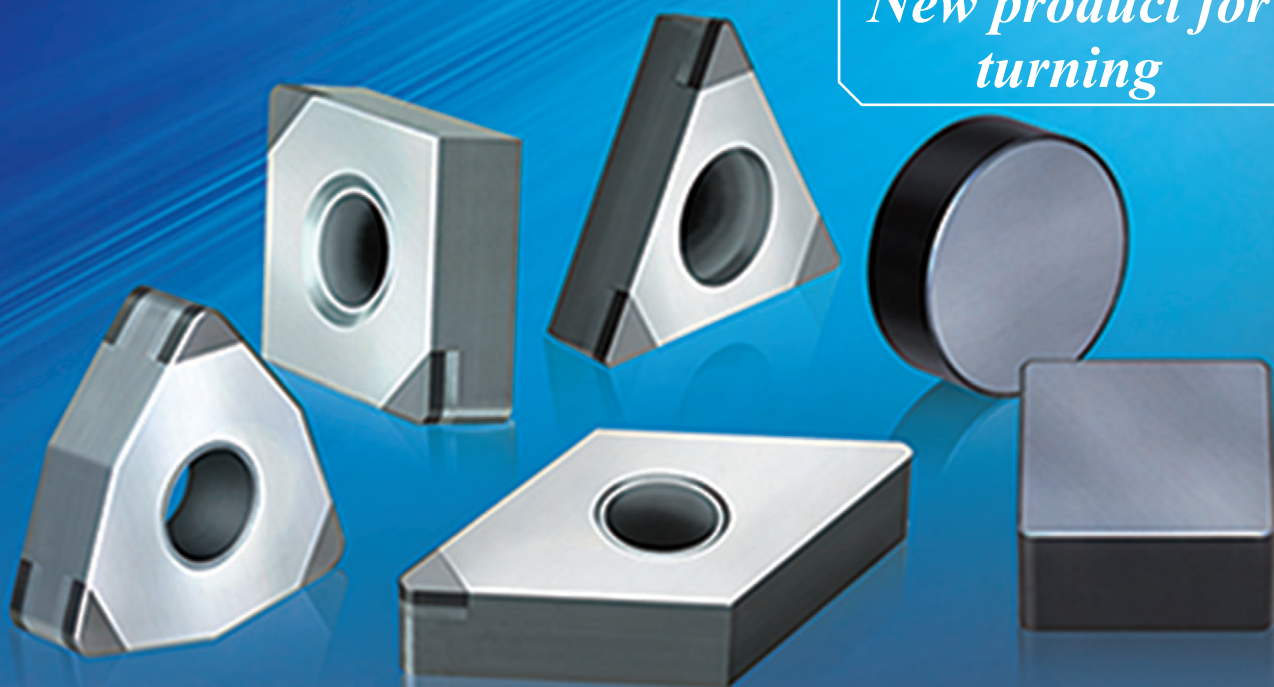


*New product for
turning*



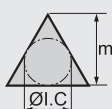
PCBN&PCD inserts



Insert shape

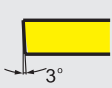
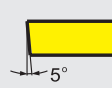
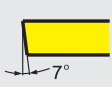
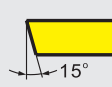
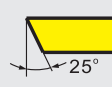
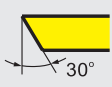
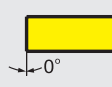
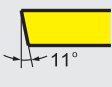
 A	 B	 C
 D	 E	 H
 K	 L	 M
 P	 S	 T
 V	 W	Others Z

Tolerance class

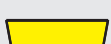
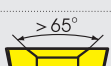
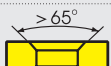
							
Code	Nose height M Tolerance(mm)	Inscribed circle Tolerance(mm)	Thickness S Tolerance(mm)	Code	Nose height M Tolerance(mm)	Inscribed circle Tolerance(mm)	Thickness S Tolerance(mm)
A	±0.005	±0.025	±0.025	J	±0.005	±0.05-±0.13	±0.025
F	±0.005	±0.013	±0.025	K	±0.013	±0.05-±0.13	±0.025
C	±0.013	±0.025	±0.025	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

C N G A

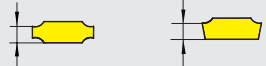
Clearance angle of main cutting edge

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

Chipbreaker and clamping system

Code	With/Without hole	Section plane of insert
N	Without	
B	With	 >65°
C	With	 >65°
A	With	
W	With	 ≤65°
Q	With	 ≤65°
X	---	Special

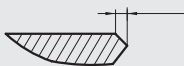
Length of cutting edge						
Diameter of IC (mm)	Insert shape					
	C	D	S	T	V	W
3.97				06		
5.0						
5.56				09		
6.0						
6.35	06	07		11	11	
8.0						
9.525	09	11	09	16	16	06
10.0						
12.0						
12.7	12	15	12	22	22	08
15.875	16		15	27		
16.0		19				
19.05	19		19	33		
20.0						
25.0	25	25				
25.4			25			
31.75						
32						

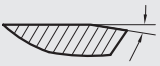
Insert thickness			
			
Code	Insert thickness(mm)	Code	Insert thickness(mm)
02	2.38	06	6.35
T2	2.58	T6	6.75
03	3.18	07	7.94
T3	3.97	09	9.52
04	4.76	T9	9.72
T4	4.96	11	11.11
05	5.56	12	12.70
T5	5.95		

Nose radius code	
Code	Nose radius(mm)
00	No radius
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	Others
Diameter of insert (Metric)	
Round insert	

12 04 08 T 020 20 - 2 S

Type of cutting edge		
Code	Type of cutting edge	Diagram
F	Sharp edges	
E	Honing	
T	Chamfering	
S	Chamfering + honing	

Chamfer width			
			
010	0.10	040	0.40
015	0.15	045	0.45
020	0.20	050	0.50
025	0.25	100	1.00
030	0.30	200	2.00
035	0.35		

Chamfer angle	
	
05	5°
10	10°
15	15°
20	20°
25	25°
30	30°

Number of cutting nose		
Code	Number	Diagram
Unspecified	Single edge	
2	Double edges	
3	Three edges	
4	Four edges	

CNGA120408ISO standard code							
	Grade						
	YCB011	YCB012	YCB121	YCB211	YZB121	YZB221	YZB231
Type of cutting edge	T	S	T	S	S	T	T
Chamfer angle	15°	20°	20°	25°	20°	20°	20°
Chamfer width	0.15	0.10	0.20	0.15	0.10	0.20	0.25

Special edge		
Code	Type of cutting edge	Diagram
S	Extra long	
L	Whole edge	

PCBN&PCD inserts overview

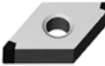
Negative inserts

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
 A121	CNGA120404	○	○		
	CNGA120408	○	○		
	CNGA120412	○	○		
 A121	CNGA120404-2	★	★		
	CNGA120408-2	★	★		
	CNGA120412-2	○	○		
 A121	CNGA120404-2			○	
	CNGA120408-2			○	
	CNGA120412-2			○	
 A122	CNGN120404			○	
	CNGN12T608			○	
	CNGN120712			○	
 A123	DNGA150404	○	○		
	DNGA150408	○	○		
	DNGA150412	○	○		
	DNGA150602	○	○		
	DNGA150604	○	○		
	DNGA150608	○	○		
	DNGA150612	○	○		
 A123	DNGA150404-2	★	★		
	DNGA150408-2	★	★		
	DNGA150412-2	○	○		
	DNGA150602-2	○	○		
	DNGA150604-2	○	○		
	DNGA150608-2	○	○		
	DNGA150612-2	○	○		

★ Recommended grade

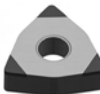
PCBN&PCD inserts overview

Negative inserts

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
 A123	DNGA150404-2			○	
	DNGA150408-2			○	
	DNGA150412-2			○	
	DNGA150604-2			○	
	DNGA150608-2			○	
	DNGA150612-2			○	
 A124	DNGN110404			○	
	DNGN110408			○	
 A125	SNGN120404			○	
	SNGN120408			○	
	SNGN12T612			○	
	SNGN150716			○	
	SNGN150720			○	
 A126	TNGA160402	○	○		
	TNGA160404	○	○		
	TNGA160408	○	○		
	TNGA160412	○	○		
 A126	TNGA160402-3	○	○		
	TNGA160404-3	★	★		
	TNGA160408-3	★	★		
 A126	TNGA160412-3	○	○		
	TNGA160404-3			○	
	TNGA160408-3			○	
 A126	TNGA160412-3			○	

★ Recommended grade

PCBN&PCD inserts overview Negative inserts

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
 A127	VNGA160402	○	○		
	VNGA160404	○	○		
	VNGA160408	○	○		
	VNGA160412	○	○		
 A127	VNGA160402-2	○	○		
	VNGA160404-2	★	★		
	VNGA160408-2	★	★		
	VNGA160412-2	○	○		
 A128	WNGA080404-3	★	★		
	WNGA080408-3	★	★		
	WNGA080412-3	○	○		
 A128	WNGA080404-3			○	
	WNGA080408-3			○	
	WNGA080412-3			○	
 A129	RNGN090300			○	
	RNGN120400			○	
	RNGN120700			○	
	RNGN150700			○	

★ Recommended grade

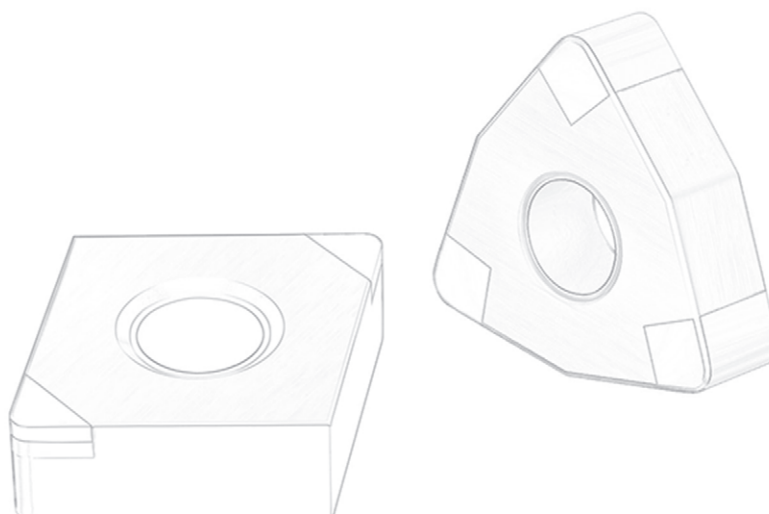
PCBN&PCD inserts overview Positive inserts

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
 A130	CCGW060204	○	○		★
	CCGW060208	○	○		★
	CCGW09T304	○	○		★
	CCGW09T308	○	○		★
	CCGW120404	○	○		
	CCGW120408	○	○		★
	CCGW120412	○	○		
 A130	CCGW060204-2	○	○		
	CCGW060208-2	○	○		
	CCGW09T304-2	★	★		
	CCGW09T308-2	★	★		
	CCGW120404-2	★	★		
	CCGW120408-2	★	★		
	CCGW120412-2	○	○		
 A131	CCMX060202				★
	CCMX060204				★
	CCMX060208				★
	CCMX09T304				★
	CCMX09T308				★
	CCMX120408				★

★ Recommended grade

General turning

PCBN&PCD inserts



PCBN&PCD inserts overview

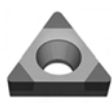
Positive inserts

PCBN&PCD inserts overview

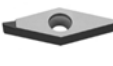
Positive inserts

General
turning

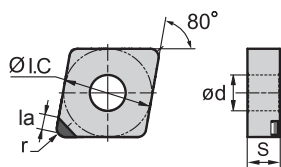
PCBN&PCD inserts

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
	DCGW070202	○	○		★
	DCGW070204	○	○		★
	DCGW070208	○	○		
	DCGW11T304	○	○		★
	DCGW11T308	○	○		★
A132					
	DCGW070202-2	○	○		
	DCGW070204-2	○	○		
	DCGW070208-2	○	○		
	DCGW11T304-2	★	★		
	DCGW11T308-2	★	★		
A132					
	DCMX070202				★
	DCMX070204				★
	DCMX11T304				★
	DCMX11T308				★
A132					
	TCGW090204	○	○		★
	TCGW090208	○	○		★
	TCGW110202	○	○		★
	TCGW110204	○	○		★
	TCGW110208	○	○		★
	TCGW110304	○	○		★
	TCGW16T304	○	○		★
	TCGW16T308	○	○		★
	TCGW16T312	○	○		★
A133					
	TCGW090204-3	○	○		
	TCGW090208-3	○	○		
	TCGW110202-3	○	○		
	TCGW110204-3	★	★		
	TCGW110208-3	★	★		
	TCGW110304-3	★	★		
	TCGW16T304-3	★	★		
	TCGW16T308-3	★	★		
	TCGW16T312-3	○	○		
A133					

★ Recommended grade

Inserts shape	Type	Grade			
		YCB011	YCB012	YZB221	YCD011
	TCMX090204				★
	TCMX090208				★
	TCMX110202				★
	TCMX110204				★
	TCMX110208				★
	TCMX110304				★
	TCMX16T304				★
	TCMX16T308				★
	TCMX16T312				★
A134					
	VBGW160404	○	○		★
	VBGW160408	○	○		★
	VBGW160412	○	○		★
	VBGW160404-2	★	★		
	VBGW160408-2	★	★		
A135					
	VBGW160412-2	○	○		
	VBMX160404				★
	VBMX160408				★
	VBMX160412				★
A135					
	VCGW160404				★
	VCGW160408				★
	VCGW160412				★
	VCMX160404				★
	VCMX160408				★
A136					
	VCMX160412				★
A136					

★ Recommended grade

CN (Negative inserts)

😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	CNGA120404	12.7	4.76	5.16	0.4	2.5	○	○		
	CNGA120408	12.7	4.76	5.16	0.8	2.4	○	○		
	CNGA120412	12.7	4.76	5.16	1.2	2.3	○	○		
	CNGA120404-2	12.7	4.76	5.16	0.4	2.5	★	★		
	CNGA120408-2	12.7	4.76	5.16	0.8	2.4	★	★		
	CNGA120412-2	12.7	4.76	5.16	1.2	2.3	○	○		
	CNGA120404-2	12.7	4.76	5.16	0.4	2.5			○	
	CNGA120408-2	12.7	4.76	5.16	0.8	2.4			○	
	CNGA120412-2	12.7	4.76	5.16	1.2	2.3			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

DCLNR/L
Kr:95°



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PCLNR/L
Kr:95°

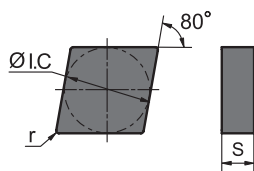


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PCLNR/L
Kr:95°



A202

CN (Negative inserts)

😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

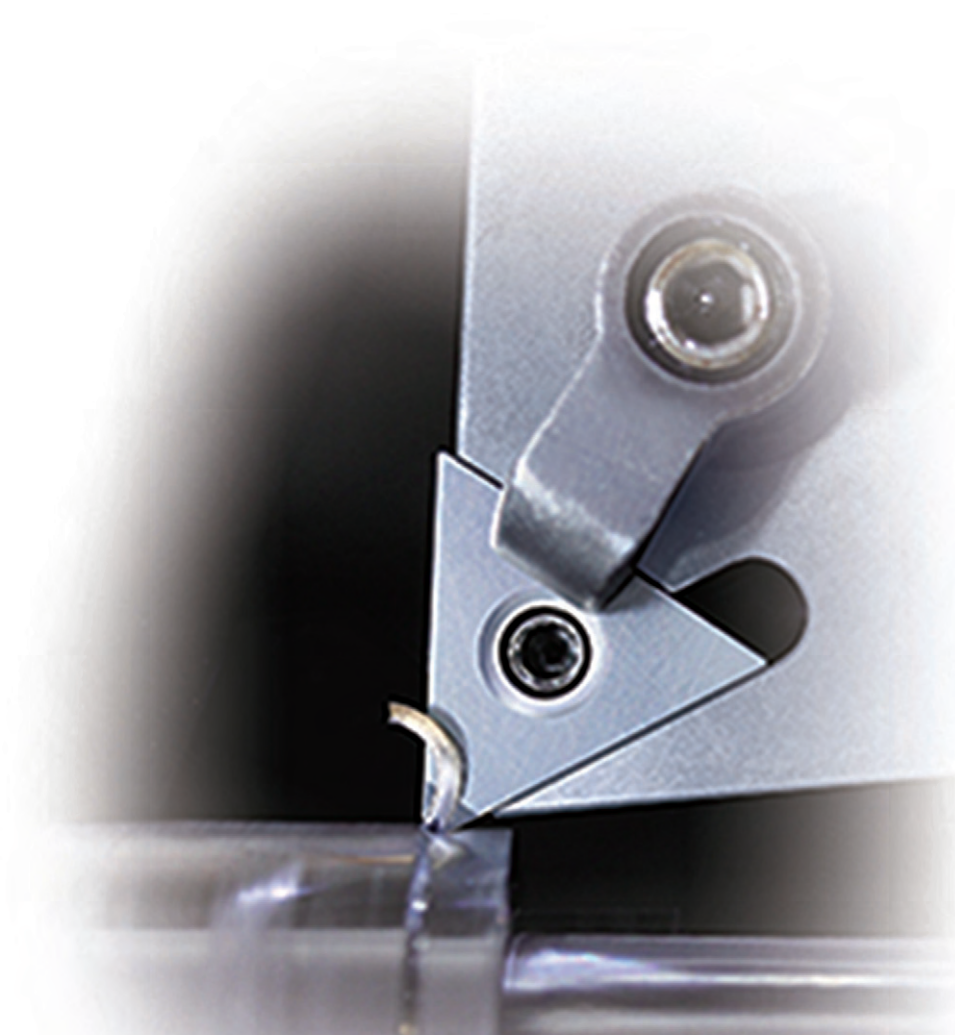
Inserts shape	Type	Dimensions(mm)			Grade			
		ØI.C	S	r	YCB011	YCB012	YZB221	YCD011
	CNGN120404	12.7	4.76	0.4			○	
	CNGN12T608	12.7	6.75	0.8			○	
	CNGN120712	12.7	7.94	1.2			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

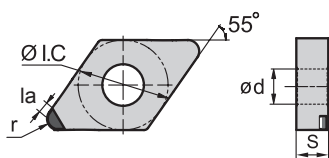
Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.



DN (Negative inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	DNGA150404	12.7	4.76	5.16	0.4	2.5	○	○		
	DNGA150408	12.7	4.76	5.16	0.8	2.1	○	○		
	DNGA150412	12.7	4.76	5.16	1.2	2.0	○	○		
	DNGA150602	12.7	6.35	5.16	0.2	2.7	○	○		
	DNGA150604	12.7	6.35	5.16	0.4	2.5	○	○		
	DNGA150608	12.7	6.35	5.16	0.8	2.1	○	○		
	DNGA150612	12.7	6.35	5.16	1.2	2.0	○	○		
	DNGA150404-2	12.7	4.76	5.16	0.4	2.5	★	★		
	DNGA150408-2	12.7	4.76	5.16	0.8	2.1	★	★		
	DNGA150412-2	12.7	4.76	5.16	1.2	2.0	○	○		
	DNGA150602-2	12.7	6.35	5.16	0.2	2.7	○	○		
	DNGA150604-2	12.7	6.35	5.16	0.4	2.5	○	○		
	DNGA150608-2	12.7	6.35	5.16	0.8	2.1	○	○		
	DNGA150612-2	12.7	6.35	5.16	1.2	2.0	○	○		
	DNGA150404-2	12.7	4.76	5.16	0.4	2.5			○	
	DNGA150408-2	12.7	4.76	5.16	0.8	2.1			○	
	DNGA150412-2	12.7	4.76	5.16	1.2	2.0			○	
	DNGA150604-2	12.7	6.35	5.16	0.4	2.5			○	
	DNGA150608-2	12.7	6.35	5.16	0.8	2.1			○	
	DNGA150612-2	12.7	6.35	5.16	1.2	2.0			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool



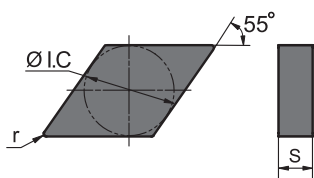
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DN (Negative inserts)
 Good working condition
  Normal working condition
  Bad working condition

Workpiece material	H Super hard material				
	K Cast iron				
	N Non ferrous metal				

Inserts shape	Type	Dimensions(mm)			Grade			
		ØI.C	S	r	YCB011	YCB012	YZB221	YCD011
	DNGN110404	9.525	4.76	0.4			○	
	DNGN110408	9.525	4.76	0.8			○	

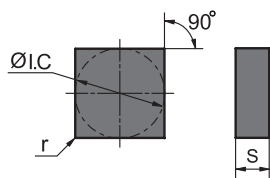
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

SN□□ (Negative inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😞	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)			Grade			
		ØI.C	S	r	YCB011	YCB012	YZB221	YCD011
	SNGN120404	12.7	4.76	0.4			○	
	SNGN120408	12.7	4.76	0.8			○	
	SNGN12T612	12.7	6.75	1.2			○	
	SNGN150716	15.875	7.94	1.6			○	
	SNGN150720	15.875	7.94	2.0			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

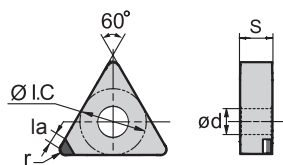
Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.



TN (Negative inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	TNGA160402	9.525	4.76	3.81	0.2	2.5	○	○		
	TNGA160404	9.525	4.76	3.81	0.4	2.5	○	○		
	TNGA160408	9.525	4.76	3.81	0.8	2.2	○	○		
	TNGA160412	9.525	4.76	3.81	1.2	2.0	○	○		
	TNGA160402-3	9.525	4.76	3.81	0.2	2.5	★	★		
	TNGA160404-3	9.525	4.76	3.81	0.4	2.5	★	★		
	TNGA160408-3	9.525	4.76	3.81	0.8	2.2	★	★		
	TNGA160412-3	9.525	4.76	3.81	1.2	2.0	○	○		
	TNGA160404-3	9.525	4.76	3.81	0.4	2.5			○	
	TNGA160408-3	9.525	4.76	3.81	0.8	2.2			○	
	TNGA160412-3	9.525	4.76	3.81	1.2	2.0			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

DTG NR/L
Kr:90°



Page A157

PTF NR/L
Kr:90°



A169

PTT NR/L
Kr:60°



A170

PTG NR/L
Kr:90°



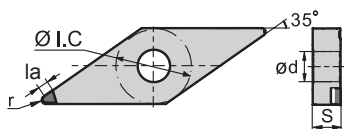
A171

PTF NR/L
Kr:90°



A206

VN (Negative inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	VNGA160402	9.525	4.76	3.81	0.2	3.3	○	○		
	VNGA160404	9.525	4.76	3.81	0.4	2.8	○	○		
	VNGA160408	9.525	4.76	3.81	0.8	2.5	○	○		
	VNGA160412	9.525	4.76	3.81	1.2	2.0	○	○		
	VNGA160402-2	9.525	4.76	3.81	0.2	3.3	○	○		
	VNGA160404-2	9.525	4.76	3.81	0.4	2.8	★	★		
	VNGA160408-2	9.525	4.76	3.81	0.8	2.5	★	★		
	VNGA160412-2	9.525	4.76	3.81	1.2	2.0	○	○		

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

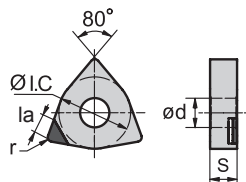
DVVNN
Kr:72°30'



DVJNR/L
Kr:93°



WN (Negative inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	WNGA080404-3	12.7	4.76	5.16	0.4	3.3	★	★		
	WNGA080408-3	12.7	4.76	5.16	0.8	2.8	★	★		
	WNGA080412-3	12.7	4.76	5.16	1.2	2.8	○	○		
	WNGA080404-3	12.7	4.76	5.16	0.4	3.3			○	
	WNGA080408-3	12.7	4.76	5.16	0.8	2.8			○	
	WNGA080412-3	12.7	4.76	5.16	1.2	2.8			○	

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

DWLNR/L
Kr:95°



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PWLNR/L
Kr:95°

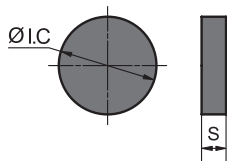


A172

PWLNR/L
Kr:95°



A207

RN (Negative inserts)

😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)		Grade			
		ØI.C	S	YCB011	YCB012	YZB221	YCD011
	RNGN090300	9.525	3.18			○	
	RNGN120400	12.7	4.76			○	
	RNGN120700	12.7	7.94			○	
	RNGN150700	15.875	7.94			○	

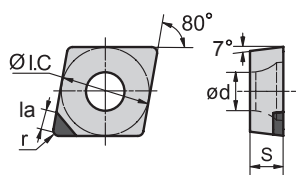
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

CC (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		☹	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	CCGW060204	6.35	2.38	2.8	0.4	2.5	○	○		★
	CCGW060208	6.35	2.38	2.8	0.8	2.4	○	○		★
	CCGW09T304	9.525	3.97	4.4	0.4	2.5	○	○		★
	CCGW09T308	9.525	3.97	4.4	0.8	2.4	○	○		★
	CCGW120404	12.7	4.76	5.5	0.4	2.5	○	○		
	CCGW120408	12.7	4.76	5.5	0.8	2.4	○	○		★
	CCGW120412	12.7	4.76	5.5	1.2	2.3	○	○		
	CCGW060204-2	6.35	2.38	2.8	0.4	2.5	○	○		
	CCGW060208-2	6.35	2.38	2.8	0.8	2.4	○	○		
	CCGW09T304-2	9.525	3.97	4.4	0.4	2.5	★	★		
	CCGW09T308-2	9.525	3.97	4.4	0.8	2.4	★	★		
	CCGW120404-2	12.7	4.76	5.5	0.4	2.5	★	★		
	CCGW120408-2	12.7	4.76	5.5	0.8	2.4	★	★		
	CCGW120412-2	12.7	4.76	5.5	1.2	2.3	○	○		

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

SCACR/L
Kr:90°



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SCLCR/L
Kr:95°



A174

SCLCR/L
Kr:95°



A208

SCFCR
Kr:90°



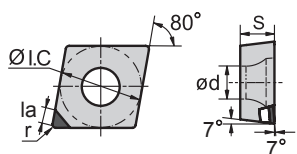
A222

SCLCR
Kr:95°



A223

CC□□ (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	CCMX060202	6.35	2.38	2.8	0.2	2.5				★
	CCMX060204	6.35	2.38	2.8	0.4	2.5				★
	CCMX060208	6.35	2.38	2.8	0.8	2.4				★
	CCMX09T304	9.525	3.97	4.4	0.4	2.5				★
	CCMX09T308	9.525	3.97	4.4	0.8	2.4				★
	CCMX120408	12.7	4.76	5.5	0.8	2.4				★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

General turning

PCBN&PCD inserts

Applicable tool

SCACR/L
Kr:90°



Page A173

SCLCR/L
Kr:95°



A174

SCLCR/L
Kr:95°



A208

SCFCR
Kr:90°



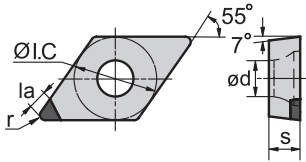
A222

SCLCR
Kr:95°



A223

DC (Positive inserts)



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

H Super hard material

K Cast iron

N Non ferrous metal

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	DCGW070202	6.35	2.38	2.8	0.2	2.7	○	○		★
	DCGW070204	6.35	2.38	2.8	0.4	2.5	○	○		★
	DCGW070208	6.35	2.38	2.8	0.8	2.1	○	○		
	DCGW11T304	9.525	3.97	4.4	0.4	2.5	○	○		★
	DCGW11T308	9.525	3.97	4.4	0.8	2.1	○	○		★
	DCGW070202-2	6.35	2.38	2.8	0.2	2.7	○	○		
	DCGW070204-2	6.35	2.38	2.8	0.4	2.5	○	○		
	DCGW070208-2	6.35	2.38	2.8	0.8	2.1	○	○		
	DCGW11T304-2	9.525	3.97	4.4	0.4	2.5	★	★		
	DCGW11T308-2	9.525	3.97	4.4	0.8	2.1	★	★		
	DCMX070202	6.35	2.38	2.8	0.2	2.7				★
	DCMX070204	6.35	2.38	2.8	0.4	2.5				★
	DCMX11T304	9.525	3.97	4.4	0.4	2.5				★
	DCMX11T308	9.525	3.97	4.4	0.8	2.1				★

★ Recommended grade (always stock available)

● Available grade (always stock available)

○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

SDACR/L
Kr:90°



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SDJCR/L
Kr:93°



A176

SDNCN
Kr:62°30'



A177

SDQCR/L
Kr:107°30'



A209

SDUCR/L
Kr:93°



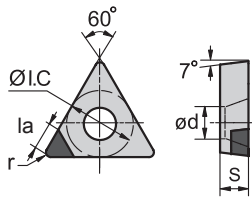
A210

SDZCR/L
Kr:95°



A211

TC (Positive inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material				
	K Cast iron	😊		😞	
	N Non ferrous metal				😐

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	TCGW090204	5.56	2.38	2.5	0.4	2.5	○	○		★
	TCGW090208	5.56	2.38	2.5	0.8	2.2	○	○		★
	TCGW110202	6.35	2.38	2.8	0.2	2.5	○	○		★
	TCGW110204	6.35	2.38	2.8	0.4	2.5	○	○		★
	TCGW110208	6.35	2.38	2.8	0.8	2.2	○	○		★
	TCGW110304	6.35	3.18	2.8	0.4	2.5	○	○		★
	TCGW16T304	9.525	3.97	4.4	0.4	2.5	○	○		★
	TCGW16T308	9.525	3.97	4.4	0.8	2.2	○	○		★
	TCGW16T312	9.525	3.97	4.4	1.2	2.0	○	○		★
	TCGW090204-3	5.56	2.38	2.5	0.4	2.5	○	○		
	TCGW090208-3	5.56	2.38	2.5	0.8	2.2	○	○		
	TCGW110202-3	6.35	2.38	2.8	0.2	2.5	○	○		
	TCGW110204-3	6.35	2.38	2.8	0.4	2.5	★	★		
	TCGW110208-3	6.35	2.38	2.8	0.8	2.2	★	★		
	TCGW110304-3	6.35	3.18	2.8	0.4	2.5	★	★		
	TCGW16T304-3	9.525	3.97	4.4	0.4	2.5	★	★		
	TCGW16T308-3	9.525	3.97	4.4	0.8	2.2	★	★		
	TCGW16T312-3	9.525	3.97	4.4	1.2	2.0	○	○		

★ Recommended grade (always stock available)

● Available grade (always stock available)

○ Make-to-order

General turning

PCBN&PCD inserts

Applicable tool

STACR/L
Kr:90°



Page A187

STFCR/L
Kr:90°



A187

STGCR/L
Kr:91°



A188

STECR/L
Kr:60°



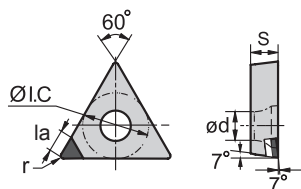
A189

STFCR/L
Kr:90°



A213

TC (Positive inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	TCMX090204	5.56	2.38	2.5	0.4	2.5				★
	TCMX090208	5.56	2.38	2.5	0.8	2.0				★
	TCMX110202	6.35	2.38	2.8	0.2	2.5				★
	TCMX110204	6.35	2.38	2.8	0.4	2.5				★
	TCMX110208	6.35	2.38	2.8	0.8	2.0				★
	TCMX110304	6.35	3.18	2.8	0.4	2.5				★
	TCMX16T304	9.525	3.97	4.4	0.4	2.5				★
	TCMX16T308	9.525	3.97	4.4	0.8	2.0				★
	TCMX16T312	9.525	3.97	4.4	1.2	2.0				★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

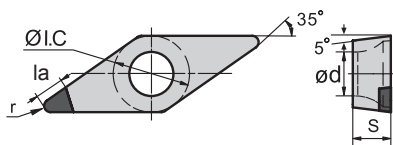
Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool



VB (Positive inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	Super hard material	Cast iron	Non ferrous metal
H	😊	😊	😊
K	😊	😊	😊
N	😊	😊	😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	VBGW160404	9.525	4.76	4.4	0.4	2.8	○	○		★
	VBGW160408	9.525	4.76	4.4	0.8	2.5	○	○		★
	VBGW160412	9.525	4.76	4.4	1.2	2.0	○	○		★
	VBGW160404-2	9.525	4.76	4.4	0.4	2.8	★	★		
	VBGW160408-2	9.525	4.76	4.4	0.8	2.5	★	★		
	VBGW160412-2	9.525	4.76	4.4	1.2	2.0	○	○		
	VBMX160404	9.525	4.76	4.4	0.4	2.8				★
	VBMX160408	9.525	4.76	4.4	0.8	2.5				★
	VBMX160412	9.525	4.76	4.4	1.2	2.0				★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Type of cutting edge

Grade	Standard	Sharp	Strengthened
YCB011	T01515	T01010	S01525
YCB012	S01025	T01015	S01035
YZB221	S02020	T01010	S02535

Non-standard edge needs to be tailor-made.

Applicable tool

SVJBR/L
Kr:93°



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SVABR/L
Kr:90°



A179

SVVBN
Kr:72°30'



A180

SVQBR/L
Kr:107°30'



A216

SVUBR/L
Kr:93°

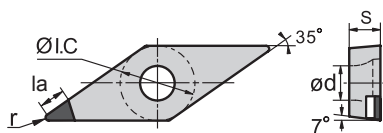


A217

General turning

PCBN&PCD inserts

VC (Positive inserts)



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	H Super hard material		😊		
	K Cast iron	😊		😊	
	N Non ferrous metal				😊

Inserts shape	Type	Dimensions(mm)					Grade			
		ØI.C	S	ød	r	la	YCB011	YCB012	YZB221	YCD011
	VCGW160404	9.525	4.76	4.4	0.4	2.8				★
	VCGW160408	9.525	4.76	4.4	0.8	2.5				★
	VCGW160412	9.525	4.76	4.4	1.2	2.0				★
	VCMX160404	9.525	4.76	4.4	0.4	2.8				★
	VCMX160408	9.525	4.76	4.4	0.8	2.5				★
	VCMX160412	9.525	4.76	4.4	1.2	2.0				★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Applicable tool

SVVCN
Kr:72°30'



page

A181

SVJCR/L
Kr:93°



A182

Abnormal failure and solutions for cast iron machining

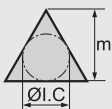
	Abnormal failure	Solution
Breakage	Breakage occurring on chamfer of rake face	Enlarge chamfered negative rake angle
	Edge crashing when finishing grey cast iron	
Abrasion	Abrasion occurring when machining nodular cast iron	Change to dry cutting
	Abrasion under dry cutting conditions	Reduce cutting speed
	Abrasion occurring when machining grey cast iron	Change to dry cutting; increase cutting speed
Surface quality	Poor surface finish	Increase cutting speed; increase nose radius; reduce feed rate
	Bad cylindricity and coaxiality	Reduce nose radius; improve stability; change to positive insert
	Burrs	Change to positive insert; reduce chamfer width

Abnormal failure and solutions for hardened steel

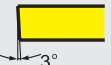
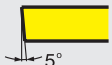
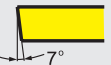
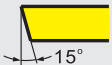
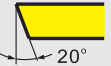
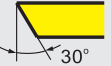
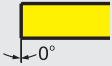
Abnormal failure			Solution
Breakage	Cutting edge breakage		Enlarge chamfered negative rake angle; raise cutting speed and reduce feed
	Flaking and crater wear on rake face		Reduce cutting speed
	Thermal cracks		Change to dry cutting; reduce cutting speed
Abrasion	Wear occurring on chamfer of rake face		Reduce cutting speed
	Rapid wear when finishing grey cast iron		
Surface quality	Poor surface finish	Vibration	Reduce chamfered negative rake angle; reduce nose radius; reduce feed rate; improve stability
		Tool mark	Increase nose radius; reduce feed rate; change to dry cutting; increase cutting speed
	Bad cylindricity and coaxiality		Reduce nose radius; improve stability; change to positive insert

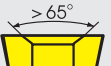
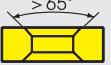
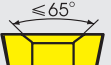
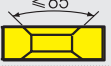
Ceramic inserts code key

Insert shape		
		
A	B	C
		
D	E	H
		
K	L	M
		
P	R	S
		
T	V	W

Tolerance class							
							
Code	Nose height M Tolerance(mm)	Inscribed circle Tolerance(mm)	Thickness S Tolerance(mm)	Code	Nose height M Tolerance(mm)	Inscribed circle Tolerance(mm)	Thickness S Tolerance(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

R P G N

Clearance angle of main cutting edge			
Code	Clearance angle	Code	Clearance angle
A		B	
C		D	
E		F	
G		N	
P		O	Other clearance angle

Chipbreaker and clamping system		
Code	With/Without hole	Section plane of insert
N	Without	
B	With	
C	With	
A	With	
W	With	
Q	With	
X	---	Special

Length of cutting edge						
Diameter of IC (mm)	Insert shape					
	C	D	S	T	V	W
3.97				06		
5.0						
5.56				09		
6.0						
6.35	06	07		11	11	
8.0						
9.525	09	11	09	16	16	06
10.0						
12.0						
12.7	12	15	12	22	22	08
15.875	16		15	27		
16.0		19				
19.05	19		19	33		
20.0						
25.0	25	25				
25.4			25			
31.75						
32						

Insert thickness

Thickness is defined as height from bottom of insert to the highest part of cutting edge.

Code	Insert thickness(mm)	Code	Insert thickness(mm)
02	2.38	06	6.35
T2	2.58	T6	6.75
03	3.18	07	7.94
T3	3.97	09	9.52
04	4.76	T9	9.72
T4	4.96	11	11.11
05	5.56	12	12.70
T5	5.95		

Nose radius code	
Code	Nose radius(mm)
00	No radius
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	Others
Diameter of insert (Metric)	Round insert

09 07 00 T 010 20 - V

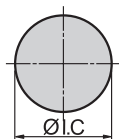
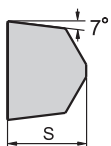
Type of cutting edge		
Code	Type of cutting edge	Picture
E	Honing	
T	Chamfering	
S	Chamfering + honing	
F	Sharp edges	

Chamfer width (mm)			
010	0.10	040	0.40
015	0.15	045	0.45
020	0.20	050	0.50
025	0.25	100	1.00
030	0.30	200	2.00
035	0.35		

Chamfer angle	
05	5°
10	10°
15	15°
20	20°
25	25°
30	30°

V-type positioning surface

😊 Good working condition 😐 Normal working condition ☹ Bad working condition



Workpiece material

K Cast iron**S** Heat resistant alloy**H** Super hard material

Inserts shape	Type	Dimensions(mm)		Grade
		ØI.C	S	CN3100
	RCGN090700T01015-V	9.525	7.94	○
	RCGN090700T01520-V	9.525	7.94	○
	RCGN090700T01020-V	9.525	7.94	●
	RCGN120700T01015-V	12.7	7.94	○
	RCGN120700T01020-V	12.7	7.94	○
	RCGN120700T01520-V	12.7	7.94	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

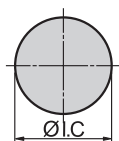
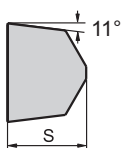
Applicable tool



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2. Tailor-made nonstandard CRXCR

😊 Good working condition 😐 Normal working condition ☹ Bad working condition



Workpiece material

K Cast iron**S** Heat resistant alloy**H** Super hard material

Inserts shape	Type	Dimensions(mm)		Grade
		ØI.C	S	CN3100
	RPGN090700T01015-V	9.525	7.94	○
	RPGN090700T01520-V	9.525	7.94	○
	RPGN090700T01020-V	9.525	7.94	●
	RPGN120700T01015-V	12.7	7.94	○
	RPGN120700T01020-V	12.7	7.94	○
	RPGN120700T01520-V	12.7	7.94	○

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Applicable tool



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2. Tailor-made nonstandard CRXCR