



SOLID CBN INSERTS

Overview			C01	-	C04
ISO Code			C05	-	C06
Solid CBN Inserts	CNGN/CNGX RCGX-V/RCGX-Y DNGN TNGN/TNGX	RNGN SNGN/SNGX TPGN WNGN/WNGX	C07	-	C14

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Overview

Solid CBN inserts are exceptionally durable cutting tools utilized for machining hardened steels and other hard materials.

With excellent wear resistance and superior surface finish, they contribute to increased productivity and longer tool life. These inserts find wide application in industries such as automotive and aerospace for efficient and precise machining.

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CBN Grade And Recommend Application

Grade	CBN V%	Binder	Hardness (Hv)	Finish/Rough	Ave Particle Size (μm)	Working Material Hardness	Continuous/ Intermittent Processing	Suggest Handling Material
CBN500	85-90	Al-TiN	3400-3700	Semifinishing	6-12	HRC55-68	Continuous processing	HSS, cast iron, hardened steel, and other difficult processing materials
CBN680	85-90	Al-TiN	3300-3500	Rough/ Semifinishing	17-20	HRC45-62	Both	Gray Cast iron, ductile cast iron, high hard alloy cast iron, high nickel-chromium, high chromium cast iron, high manganese steel
CBN630	80-85	Al-TiN	3300-3500	Rough	20-25	≧ HRC60	Intermittent processing	Gray Cast iron, ductile cast iron, high hard alloy cast iron, high nickel-chromium, high chromium cast iron, high manganese steel
CBN2080	90-95	Al-Co	3300-3500	Finish	4	≧ HRC60	Continuous/ light Intermittent	Gray Cast iron, ductile cast iron, pearlitic cast iron, Ferritic cast iron

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What Are Solid CBN Inserts Used For

Solid CBN inserts offer a significant advantage in processing all ferrous materials, making them the first choice for hard-turning the following materials:



P : Steel

Non-alloy steel, Low alloy steel, High alloy steel, cast iron, and long chip malleable iron



H : Hardened Materials

Hardened materials, hardened steels and difficult-to-process materials



K : Cast Iron

White cast iron, chilled cast iron, gray cast iron, and ductile iron

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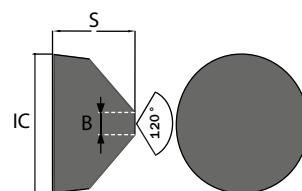
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CBN Grade And Recommend Application

Workpiece	Materials	Hardness	Angle Kr	Cutting Speed (m/min)	Cutting Depth (mm)	Cutting Feed (mm/r)
Hardness steel	Gr15	HRC60	45-95°	70~200	0.50~3.00	0.10~0.30
Alloy cast iron	High chrome iron	HSD80	10~45°	15~200	0.50~10.00	0.30~3.00
Ductile iron	QT450	HB220	45-95°	300~700	0.50~5.00	0.30~1.50
Gray cast iron	HT200-300	HB180-260	45-95°	300~1100	0.30~4.00	0.25~1.00
Hardened gear	40Cr	HRC58	45-95°	60~120	0.30~300	0.10~0.50
Ball screw	Gr15	HRC55	45~95°	80~120	0.50~8.00	0.10~0.30
Roller	High nickel chrome	HSD78	10~45°	15~50	1.00~10.00	0.50~1.5
Chill roller	Chill cast iron	HSD67	10~45°	20~50	1.00~10.00	0.50~1.5
Brake disc	HT200-300	HB190-220	45~90°	300~1200	0.25~4.00	0.25~1.00
Reducer housing	HT250	HB200	45~95°	100~180	0.50~4.00	0.50~0.80

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Solid CBN Inserts For Roller



Positive

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Finish machining

Rough machining

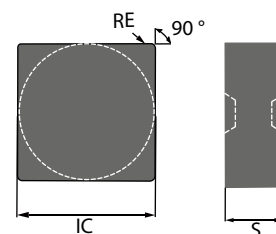
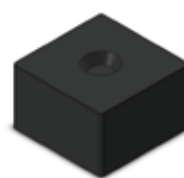
Continuous cutting

Interrupted cutting

Working Application	Roller	Inserts Specification	RC1207-Y
Working Material	High Speed Steel	CBN Grade	CBN680/CBN500
Workpiece Hardness	HSD 80-85	AP	2 mm
Machine Type	Rought Machining	VC	72 m/min
Machine Area	Excircle& Slot	F	0.4 mm/r

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Solid CBN Inserts For Gear



Negative

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Finish machining

Rough machining

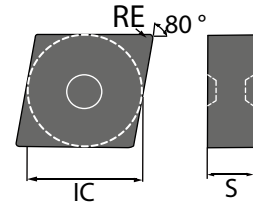
Continuous cutting

Interrupted cutting

Working Application	Gear	Inserts Selection	SN1608
Working Material	42CrMo	CBN Grade	CBN630
Workpiece Hardness	HRC 45-55	AP	4 mm
Machine Type	Heavy interrupted,Rough machining	VC	97 m/min
Machine Area	Excircle& End Face	F	0.7 mm/r

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Solid CBN Inserts For Brake Disc



Working Application	Brake Disc	Inserts Specification	CN1207
Working Material	HT 200-300	CBN Grade	CBN680/CBN500
Workpiece Hardness	HB 200-300	AP	0.2~0.5 mm
Machine Type	Continuous, Finishing	VC	450-1100 m/min
Machine Area	Excircle& End Face	F	0.15-0.3 mm/r

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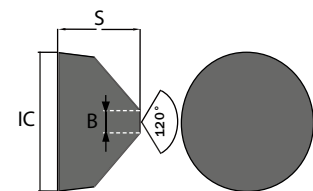
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Solid CBN Inserts For Bearing

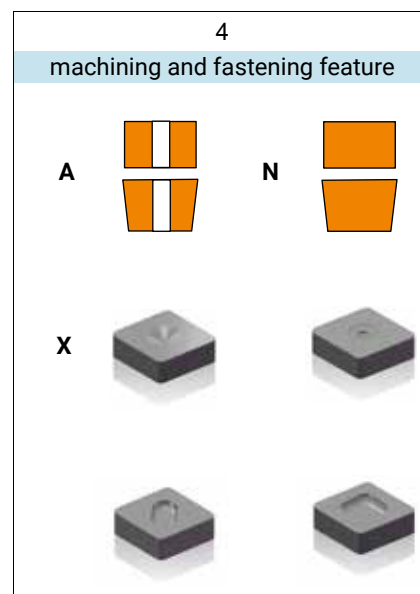
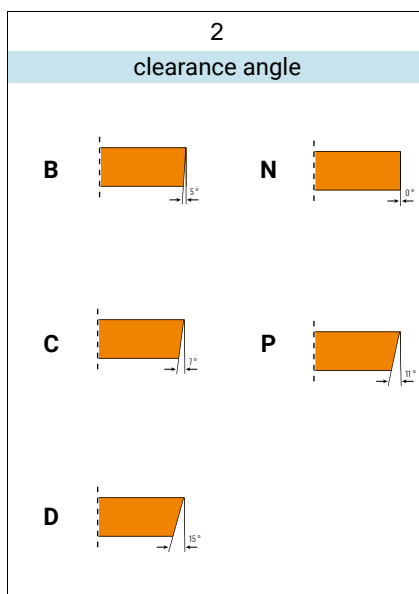
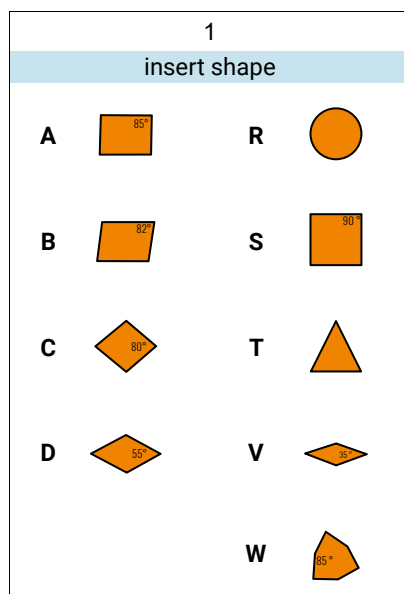


Working Application	Bearing	Inserts Selection	RC0907-Y
Working Material	65Mn	CBN Grade	CBN500
Workpiece Hardness	HRC 58-62	AP	0.5 mm
Machine Type	Continuous, Finishing	VC	120 m/min
Machine Area	Excircle& End Face	F	0.15 mm/r

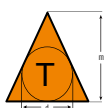
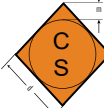
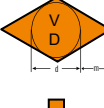
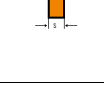
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ISO

C	N	M	A	12	04	08	-	1	TP	-	T	010	15	0
1	2	3	4	5	6	7		8	9		10	11	12	13



3
Tolerances, ISO[mm]

	d	m	s
 A	±0.025	±0.005	±0.025
 C	±0.025	±0.013	±0.025
 E	±0.025	±0.025	±0.025
 F	±0.013	±0.005	±0.025
 G	±0.025	±0.025	±0.130
H	±0.013	±0.013	±0.025
J	±0.05~±0.15	±0.005	±0.025
K	±0.05~±0.15	±0.013	±0.025
L	±0.05~±0.15	±0.025	±0.025
M	±0.05~±0.15	±0.08~±0.20	±0.130

5
Insert size

Inner circle diameter			C	D	R	S	T	V	W
IC mm	Code	IC inch	Code	Code	Code	Code	Code	Code	Code
3.97	1.2	5/32"				03	06		03
5							08		
5.56	1.8					07	09		
6				06					
6.35	2	1/4"	06	07	06		11	11	04
8			08		08				05
9.525	3	3/8"	09	11	09	09	16	16	06
10					10				
12					12				
12.7	4	1/2"	12	15	12	12	22	22	08
15.875	5	5/8"	16		15	15	27		10
16					16				12
19.05	6	3/4"	19		19	19	33		
20					20				
25									
25.4	8	1"	25			25			
31.75	10	1-1/4"							
						W			

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ANSI

C	N	M	A	4	3	2	-	1	TP	-	T	010	15	0
1	2	3	4	5	6	7		8	9		10	11	12	13

6 thickness			
ISO		ANSI	
01	1.59	1	1/16
T1	1.98	1.2	0.75
02	2.38	1.5	3/32
T2	2.78	-	-
03	3.18	2	1/8
T3	3.97	2.5	5/32
04	4.76	3	3/16
05	5.56	3.5	7/32
06	6.36	4	1/4
07	7.94	5	5/16
09	9.52	6	3/8

7 corner radius r mm, inch			
ISO		ANSI	
01	r=0.1	0.1	1/25
02	r=0.2	0	2/25
04	r=0.4	1	1/64
08	r=0.8	2	1/32
12	r=1.2	3	3/64
16	r=1.6	4	1/16
24	r=2.4	6	3/32
32	r=3.2	8	1/8
0	For diameters converted from imperial units to mm		
M0	For diameters in metric units		

8 number of cutting corners	
1	1 corner
2	2 corners
3	3 corners
4	4 corners
6	6 corners
8	8 corners

9 inserts form	
	TP
	FE
	SF

10 ① edge formation	
E	Honing
F	Sharp edge
T	Chamfering
S	Chamfering + Honing

11 ① chamfer width	
010	0.10mm
020	0.20mm
025	0.25mm
030	0.30mm
040	0.40mm
050	0.50mm
070	0.70mm
150	1.50mm
200	2.00mm

12 ① chamfer edge	
10	10°
15	15°
20	20°
25	25°
30	30°
35	35°
45	45°

13 ① blunt roundness	
02	0.002
05	0.005
10	0.01
20	0.02
30	0.03

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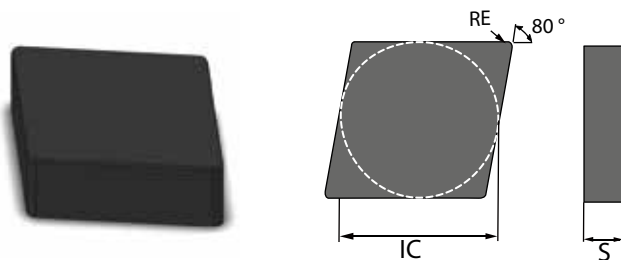
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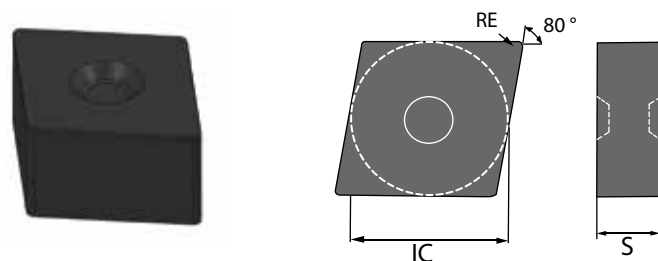
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Item Code	IC	S	RE
CNGN090304-SF	9.525	3.18	0.4
CNGN090308-SF	9.525	3.18	0.8
CNGN090404-SF	9.525	4.76	0.4
CNGN090408-SF	9.525	4.76	0.8

Item Code	IC	S	RE
CNGN120404-SF	12.7	4.76	0.4
CNGN120408-SF	12.7	4.76	0.8
CNGN160404-SF	15.875	4.76	0.4
CNGN160408-SF	15.875	4.76	0.8

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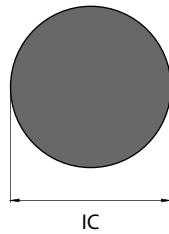
Item Code	IC	S	RE
CNGX120712-SF	12.7	7.94	1.2
CNGX120716-SF	12.7	7.94	1.6
CNGX160712-SF	15.875	7.94	1.2
CNGX160716-SF	15.875	7.94	1.6

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Order Note

- Please refer to C 05/06 for solid CBN inserts code key description.
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RNGN



Item Code	IC	S	RE
RNGN060300-SF	6	3.18	0
RNGN060400-SF	6	4.76	0
RNGN060600-SF	6	6.35	0
RNGN090300-SF	9.525	3.18	0
RNGN090400-SF	9.525	4.76	0
RNGN090700-SF	9.525	7.94	0
RNGN120300-SF	12.7	3.18	0
RNGN120400-SF	12.7	4.76	0
RNGN120700-SF	12.7	7.94	0

Item Code	IC	S	RE
RNGN060300-SF	6	3.18	0
RNGN060400-SF	6	4.76	0
RNGN060600-SF	6	6.35	0
RNGN090300-SF	9.525	3.18	0
RNGN090400-SF	9.525	4.76	0
RNGN090700-SF	9.525	7.94	0
RNGN120300-SF	12.7	3.18	0
RNGN120400-SF	12.7	4.76	0
RNGN120700-SF	12.7	7.94	0

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PCD
INSERTS

B
CBN
INSERTS

C
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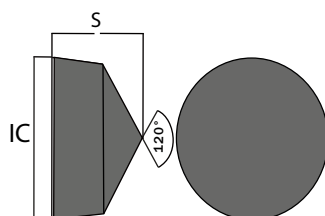
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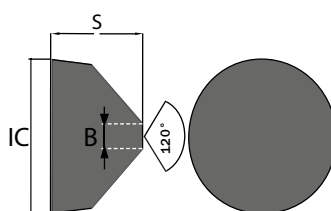
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Item Code	IC	S	RE
RCGX060400V-SF	6.35	4.76	0
RCGX060600V-SF	6.35	6.35	0
RCGX090700V-SF	9.525	7.94	0
RCGX120700V-SF	12.7	7.94	0

Item Code	IC	S	RE
RCGX151000V-SF	15.875	10.0	0
RCGX191000V-SF	19.05	10.0	0
RCGX201200V-SF	20.0	12.0	0
RCGX251200V-SF	25.4	12.0	0

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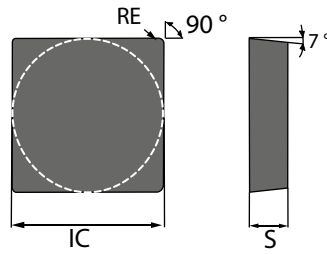
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RCGX060400Y-SF	6.35	4.76	0
RCGX060500Y-SF	6.35	5.0	0
RCGX060700Y-SF	6.35	7.94	0
RCGX090700Y-SF	9.525	7.94	0
RCGX120700Y-SF	12.7	7.94	0
RCGX191000Y-SF	19.05	10.0	0
RCGX201200Y-SF	20.0	12.0	0

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SCGN



Item Code	IC	S	RE
SCGN060304-SF	6.35	3.18	0.4
SCGN060308-SF	6.35	3.18	0.8
SCGN060404-SF	6.35	4.76	0.4
SCGN060408-SF	6.35	4.76	0.8
SCGN090304-SF	9.525	3.18	0.4
SCGN090308-SF	9.525	3.18	0.8

Item Code	IC	S	RE
SCGN090404-SF	9.525	4.76	0.4
SCGN090408-SF	9.525	4.76	0.8
SCGN120404-SF	12.7	4.76	0.4
SCGN120408-SF	12.7	4.76	0.8
SCGN120712-SF	12.7	7.94	1.2
SCGN120714-SF	12.7	7.94	1.4

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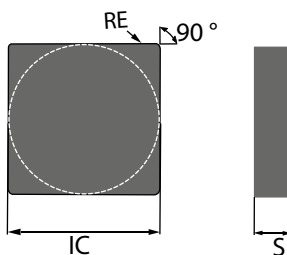
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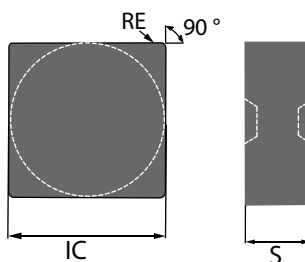
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Item Code	IC	S	RE
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SNGN060308-SF	6.35	3.18	0.8
SNGN060404-SF	6.35	4.76	0.4
SNGN060408-SF	6.35	4.76	0.8
SNGN090304-SF	9.525	3.18	0.4
SNGN090308-SF	9.525	3.18	0.8
SNGN090404-SF	9.525	4.76	0.4
SNGN090408-SF	9.525	4.76	0.8

Item Code	IC	S	RE
SNGN120404-SF	12.7	4.76	0.4
SNGN120408-SF	12.7	4.76	0.8
SNGN120712-SF	12.7	7.94	1.2
SNGN120714-SF	12.7	7.94	1.4
SNGN150712-SF	15.875	7.94	1.2
SNGN150714-SF	15.875	7.94	1.4
SNGN201012-SF	20	10	1.2
SNGN201014-SF	20	10	1.4

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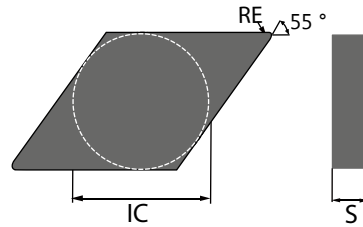
Item Code	IC	S	RE
SNGX120712-SF	12.7	7.94	1.2
SNGX120714-SF	12.7	7.94	1.4
SNGX150712-SF	15.875	7.94	1.2
SNGX150714-SF	15.875	7.94	1.4

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DNGN



Item Code	IC	S	RE
DNGN110404-SF	9.525	4.76	0.4
DNGN110408-SF	9.525	4.76	0.8
DNGN110412-SF	9.525	4.76	1.2
DNGN150404-SF	12.7	4.76	0.4
DNGN150408-SF	12.7	4.76	0.8

Item Code	IC	S	RE
DNGN150412-SF	12.7	4.76	1.2
DNGN150604-SF	12.7	6.35	0.4
DNGN150608-SF	12.7	6.35	0.8
DNGN150612-SF	12.7	6.35	1.2

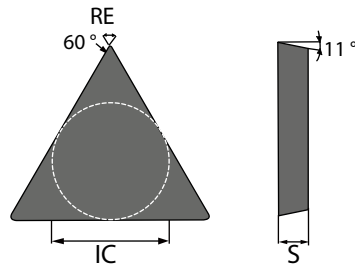
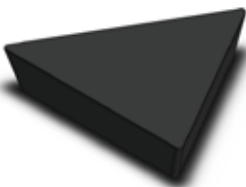
A
PCD
INSERTS

B
CBN
INSERTS

C
SOLID CBN
INSERTS

D
PCD
MILLING
CUTTERS

TPGN



Item Code	IC	S	RE
TPGN110404-SF	6.35	4.76	0.4
TPGN110408-SF	6.35	4.76	0.8
TPGN110412-SF	6.35	4.76	1.2
TPGN160404-SF	9.525	4.76	0.4
TPGN160408-SF	9.525	4.76	0.8

Item Code	IC	S	RE
TPGN160412-SF	9.525	4.76	1.2
TPGN220408-SF	12.7	4.76	0.8
TPGN220412-SF	12.7	4.76	1.2
TPGN220416-SF	12.7	4.76	1.6

E
PCD
DRILLING
TOOLS

F
PCD
REAMERS

G
DIAMOND
DRESSERS

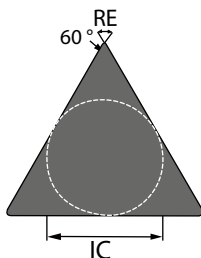
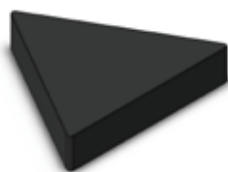
H
DIAMOND
CUSTOM-MADE
TOOLS

Order Note

- Please refer to C 05/06 for solid CBN inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.

A
PCD
INSERTS

TNGN

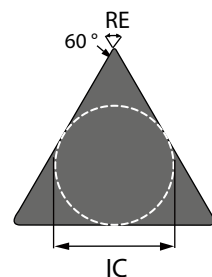
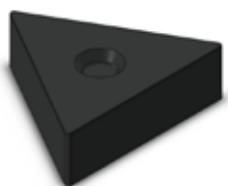
B
CBN
INSERTS

Item Code	IC	S	RE
TNGN110404-SF	6.35	4.76	0.4
TNGN110408-SF	6.35	4.76	0.8
TNGN110412-SF	6.35	4.76	1.2
TNGN160404-SF	9.525	4.76	0.4
TNGN160408-SF	9.525	4.76	0.8

Item Code	IC	S	RE
TNGN160412-SF	9.525	4.76	1.2
TNGN220408-SF	12.7	4.76	0.8
TNGN220412-SF	12.7	4.76	1.2
TNGN220416-SF	12.7	4.76	1.6

D
PCD
MILLING
CUTTERS

TNGX

E
PCD
DRILLING
TOOLSF
PCD
REAMERS

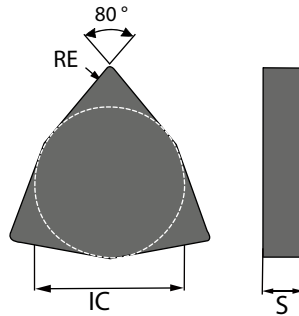
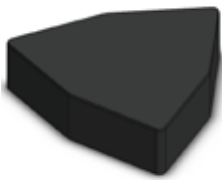
Item Code	IC	S	RE
TNGX110404-SF	6.35	4.76	0.4
TNGX110408-SF	6.35	4.76	0.8
TNGX110412-SF	6.35	4.76	1.2
TNGX160404-SF	9.525	4.76	0.4
TNGX160408-SF	9.525	4.76	0.8

G
DIAMOND
DRESSERSH
DIAMOND
CUSTOM-MADE
TOOLS

Order Note

- Please refer to C 05/06 for solid CBN inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.

WNGN



A
PCD
INSERTS

B
CBN
INSERTS

C
SOLID CBN
INSERTS

D
PCD
MILLING
CUTTERS

E
PCD
DRILLING
TOOLS

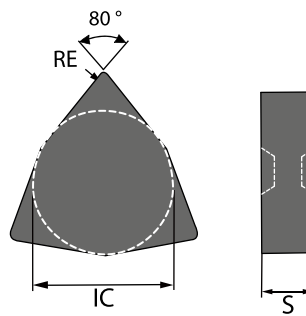
F
PCD
REAMERS

G
DIAMOND
DRESSERS

H
DIAMOND
CUSTOM-MADE
TOOLS

Item Code	IC	S	RE
WNGN080404-SF	12.7	4.76	0.4
WNGN080408-SF	12.7	4.76	0.8
WNGN080412-SF	12.7	4.76	1.2

WNGX



Item Code	IC	S	RE
WNGX080404-SF	12.7	4.76	0.4
WNGX080408-SF	12.7	4.76	0.8
WNGX080412-SF	12.7	4.76	1.2

Order Note

- Please refer to C 05/06 for solid CBN inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.