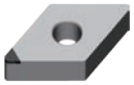
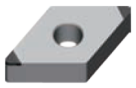
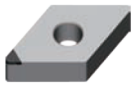
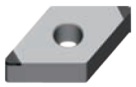
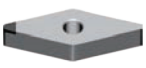
F

PCBN&PCD Inserts Overview (Negative)

Inserts Shape	Type	Grade		
		YCB011	YCB012	YCD011
	CNGA431	○	○	
	CNGA432	○	○	
	CNGA433	○	○	
	CNGA431-2	○	○	
	CNGA432-2	○	○	
	CNGA433-2	○	○	
	DNGA431	○	○	
	DNGA432	○	○	
	DNGA433	○	○	
	DNGA440	○	○	
	DNGA441	○	○	
	DNGA442	○	○	
	DNGA431-2	○	○	
	DNGA432-2	○	○	
	DNGA433-2	○	○	
	SNGA430	○	○	
	SNGA431	○	○	
	SNGA432	○	○	
	SNGA433	○	○	
	SNGA430-2	○	○	
	SNGA431-2	○	○	
	SNGA432-2	○	○	
	SNGA433-2	○	○	
	TNGA330	○	○	
	TNGA331	○	○	
	TNGA332	○	○	
	TNGA333	○	○	
	VNGA331	○	○	
	VNGA332	○	○	
	VNGA331-2	○	○	
	VNGA332-2	○	○	

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

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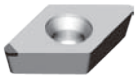
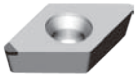
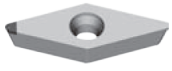
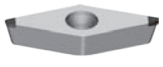
F

PCBN&PCD Inserts Overview (Positive)

Inserts Shape	Type	Grade		
		YCB011	YCB012	YCD011
	CCGW2(1.5)1	○	○	
	CCGW2(1.5)2	○	○	
	CCGW3(2.5)1	○	○	
	CCGW3(2.5)2	○	○	
	CCGW432	○	○	
	CCGW3(2.5)1-2	○	○	
	CCGW3(2.5)2-2	○	○	
		○	○	
	DCGW2(1.5)0	○	○	
	DCGW2(1.5)1	○	○	
	DCGW3(2.5)1	○	○	
	DCGW3(2.5)2	○	○	
	DCGW3(2.5)1-2	○	○	
	DCGW3(2.5)2-2	○	○	
	TCGW1.8(1.5)1	○	○	
	TCGW1.8(1.5)2	○	○	
	TCGW2(1.5)0	○	○	
	TCGW2(1.5)1	○	○	
	TCGW2(1.5)2	○	○	
	TCGW221	○	○	
	TCGW3(2.5)1	○	○	
	TCGW3(2.5)2	○	○	
	TCGW3(2.5)3	○	○	
	VBGW331	○	○	
	VBGW332	○	○	
	VBGW333	○	○	
	VBGW331-2	○	○	
	VBGW332-2	○	○	
	VBGW333-2	○	○	
	VCGW331	○	○	
	VCGW332	○	○	

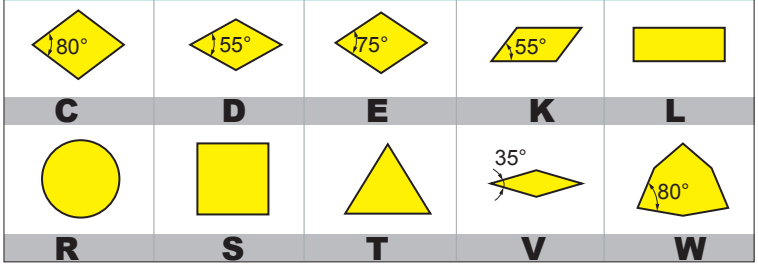
★Recommended grade (always stock available) ●Available grade (always stock available) ○Make-to-order

Ceramic inserts code key

1	2	3	4
C	N	G	A
Inserts Shape	Relief Angle	Tolerance	Chipbreaker and Clamping system

1 CNGA432T02020

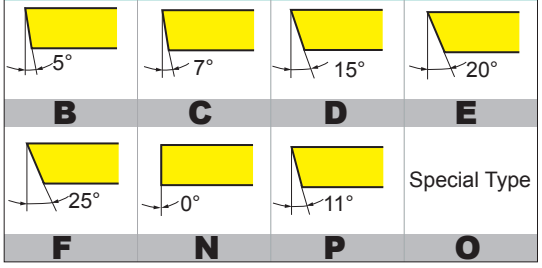
Inserts Shape



C D E K L
R S T V W

2 CNGA432T02020

Relief Angle

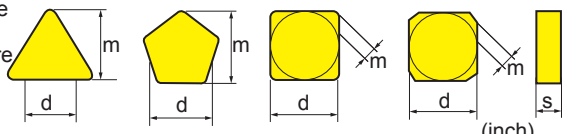


B C D E
F N P O

3 CNGA432T02020

Tolerance

d: Inscribed circle
s: Thickness
m: Reger to figure



(inch)

Class	d	m	t
A	±0.0010	±0.0002	±0.001
C	±0.0010	±0.0005	±0.001
H	±0.0005	±0.0005	±0.001
E	±0.0010	±0.0010	±0.001
G	±0.0010	±0.0010	±0.005
J	±0.002 ~ ±0.005	±0.0002	±0.01
K	±0.002 ~ ±0.005	±0.0005	±0.01
L	±0.002 ~ ±0.005	±0.0010	±0.001
M	±0.002 ~ ±0.005	±0.003 ~ ±0.007	±0.005
N	±0.002 ~ ±0.005	±0.003 ~ ±0.007	±0.001
U	±0.003 ~ ±0.010	±0.005 ~ ±0.015	±0.005

Tolerance on C,E,H,M,O,P,R,S,T,W Inserts Shape (Exceptional case)

d	Tolerance on d		Tolerance on m	
	J,K,M,N	U	M,N	U
0.250	±0.002	±0.003	±0.003	±0.005
0.375	±0.002	±0.003	±0.003	±0.005
0.500	±0.003	±0.005	±0.005	±0.008
0.625	±0.004	±0.007	±0.06	±0.011
0.750	±0.004	±0.007	±0.06	±0.011
1.000	±0.005	±0.01	±0.07	±0.015

Tolerance on D Inserts Shape (Exceptional case)

d	Tolerance on d	Tolerance on m
0.250	±0.002	±0.0043
0.375	±0.002	±0.0043
0.500	±0.003	±0.006
0.625	±0.004	±0.007
0.750	±0.004	±0.007

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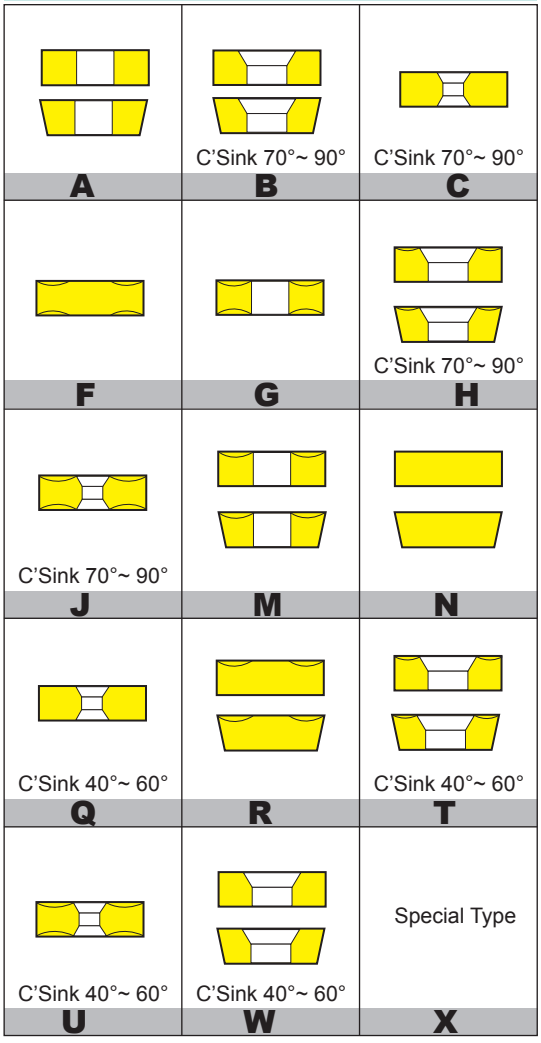
Chipbreakers and clamping system



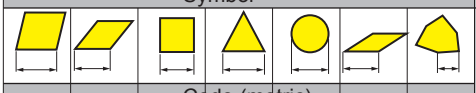
A B C
F G H
J M N
Q R T
U W X

Ceramic inserts code key

4	3	2	T	020	20
5	6	7	8	9	10
Cutting Edge Length Diameter of Inscribed Circle	Inserts Thickness	Nose Radius	Profile of Edge	Width of Chamfer	Angle of Chamfer

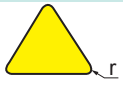
5 CNGA432T02020

Cutting Edge Length/Diameter of Inscribed Circle

Symbol								Diameter
							Code (inch)	d (inch)
Code (metric)								
03	04	03	06	03		02	1.2	0.156
04	05	04	08	04	08		1.5	0.188
05	06	05	09	05	09	03	1.8	0.219
				06				0.236
06	07	06	11	06	11	04	2	0.250
08	09	07	13	07	13	05	2.5	0.313
				08				0.315
09	11	09	16	09	16	06	3	0.375
				10				0.394
11	13	11	19	11	19	07	3.5	0.438
				12				0.472
12	15	12	22	12	22	08	4	0.500
14	17	14	24	14	24	09	4.5	0.563
16	19	15	27	15	27	10	5	0.625
				16				0.630
17	21	17	30	17	30	11	5.5	0.689
19	23	19	33	19	33	13	6	0.750
				20				0.787
22	27	22	38	22	38	15	7	0.875
				25				0.984
25	31	25	44	25	44	17	8	1.000
32	38	31	54	31	54	21	10	1.250
				32			10	1.260

7 CNGA432T02020

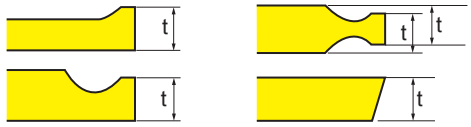
Nose Radius (Nose R)



Symbol (Code)		Corner Radius	
Metric	Inch	Metric(mm)	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	0.016
08	2	0.8	0.031
12	3	1.2	0.047
16	4	1.6	0.063
20	5	2.0	0.079
24	6	2.4	0.094
28	7	2.8	0.109
32	8	3.2	0.125
00		Round inserts (Inch)	
MO		Round inserts (Metric)	

6 CNGA432T02020

Inserts Thickness (Height of Cutting Edge)



Symbol (Code)		Height of Cutting Edge (t)	
Metric	Inch	mm	Inch
T0	0.60	0.99	0.040
01	1.0	1.59	0.063
T1	1.2	1.98	0.078
02	1.5	2.38	0.094
T2	1.75	2.58	0.109
03	2	3.18	0.125
T3	2.5	3.97	0.156
04	3	4.76	0.156
05	3.5	5.56	0.156
06	4	6.35	0.219
07	5	7.94	0.313
09	6	9.52	0.375
11	7	11.11	0.438
12	8	12.70	0.500

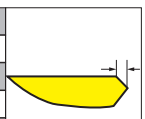
8 CNGA432T02020

Profile of Edge

Code	E	T	S	F
Inscribed Circle Diameter	Honing	Chamfering	Honing + Chamfering	Sharp Edge

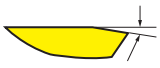
9 CNGA432T02020

Width of Chamfer (Inch)

010	015	020	025	
0.004	0.006	0.008	0.010	
030	035	040	045	
0.012	0.014	0.016	0.018	
050	100	200		
0.020	0.039	0.079		

10 CNGA432T02020

Angle of Chamfer



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

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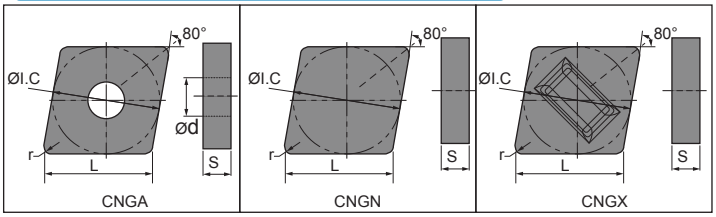
F

Ceramic inserts

CNOO (Ceramic Inserts)



Good working condition Normal working condition Bad working condition

Workpiece material		
P	Steel	
K	Cast iron	

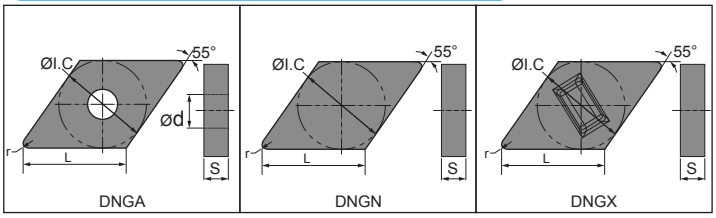
Inserts shape	Type	Dimensions (inch)					Grade		
		L	ØI.C	S	ød	r	CA1000	CN1000	CN2000
	CNGA431T02020	0.508	0.500	0.187	0.203	0.016		★	
	CNGA432T02020	0.508	0.500	0.187	0.203	0.031		★	
	CNGA433T02020	0.508	0.500	0.187	0.203	0.047		★	
	CNGA542T02020	0.634	0.625	0.250	0.250	0.031		★	
	CNGA543T02020	0.634	0.625	0.250	0.250	0.047		★	
	CNGA544T02020	0.634	0.625	0.250	0.250	0.063		★	
	CNGN431T02020	0.508	0.500	0.187	- - -	0.016	★		
	CNGN432T02020	0.508	0.500	0.187	- - -	0.031	★	○	★
	CNGN433T02020	0.508	0.500	0.187	- - -	0.047	★	○	★
	CNGN452T02020	0.508	0.500	0.313	- - -	0.031	★	○	★
	CNGN453T02020	0.508	0.500	0.313	- - -	0.047	★	○	★
	CNGN454T02020	0.508	0.500	0.313	- - -	0.063	★	○	★
	CNGN532T02020	0.634	0.625	0.187	- - -	0.031	★		
	CNGN533T02020	0.634	0.625	0.187	- - -	0.047	★	○	★
	CNGN534T02020	0.634	0.625	0.187	- - -	0.063	★	○	★
	CNGN543T02020	0.634	0.625	0.250	- - -	0.047	★		
	CNGN544T02020	0.634	0.625	0.250	- - -	0.063	★	○	★
	CNGX453T02020	0.508	0.500	0.313	- - -	0.047		★	
	CNGX454T02020	0.508	0.500	0.313	- - -	0.063		★	

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

APPLICABLE TOOLS

Ceramic inserts

DNOO (Ceramic Inserts)



Good working condition Normal working condition Bad working condition

Workpiece material				
P	Steel	☺	☹	☺ ☹
K	Cast iron	☺	☺ ☹ ☹	☺ ☹

Inserts shape	Type	Dimensions (inch)					Grade		
		L	ØI.C	S	ød	r	CA1000	CN1000	CN2000
	DNGA441T02020	0.610	0.500	0.250	0.203	0.016		★	
	DNGA442T02020	0.610	0.500	0.250	0.203	0.031		★	
	DNGA443T02020	0.610	0.500	0.250	0.203	0.047		★	
	DNGA444T02020	0.610	0.500	0.250	0.203	0.063		★	
	DNGN432T02020	0.610	0.500	0.187	- - -	0.031	★		
	DNGN433T02020	0.610	0.500	0.187	- - -	0.047	★		
	DNGN451T02020	0.610	0.500	0.187	- - -	0.016	★		
	DNGN452T02020	0.610	0.500	0.313	- - -	0.031	★		
	DNGN453T02020	0.610	0.500	0.313	- - -	0.047	★	○	○
	DNGN454T02020	0.610	0.500	0.313	- - -	0.063	★		
	DNGX453T02020	0.610	0.500	0.313	- - -	0.047		★	
	DNGX454T02020	0.610	0.500	0.313	- - -	0.063		★	

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

APPLICABLE TOOLS

DDLNR/L Kr: 93° For DNGA	**PDJNR/L** Kr: 93° For DNGA	**PDSNR/L** Kr: 62°30′ For DNGA	**PDUNR/L** Kr: 93° For DNGA	**CDJNR/L** Kr: 93° For DNGN	**JDJNR/L** Kr: 93° For DNGX

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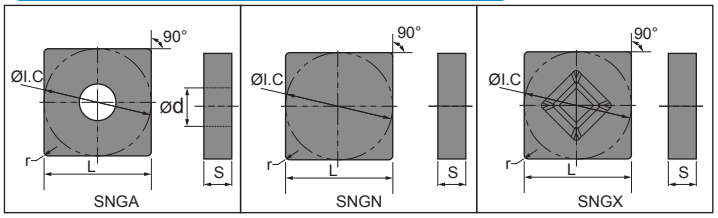
F

Ceramic inserts

SNOO (Ceramic Inserts)



Good working condition | Normal working condition | Bad working condition

Workpiece material		
P	Steel	Good working condition
K	Cast iron	Good working condition / Normal working condition / Bad working condition

Inserts shape	Type	Dimensions (inch)					Grade		
		L	ØI.C	S	ød	r	CA1000	CN1000	CN2000
	SNGA431T02020	0.500	0.500	0.187	0.203	0.016		★	
	SNGA432T02020	0.500	0.500	0.187	0.203	0.031		★	
	SNGA433T02020	0.500	0.500	0.187	0.203	0.047		★	
	SNGA434T02020	0.500	0.500	0.187	0.203	0.063		★	
	SNGN3(2.5)2T01020	0.375	0.375	0.125	- - -	0.031	★		
	SNGN3(2.5)3T01020	0.375	0.375	0.125	- - -	0.047	★		
	SNGN431T02020	0.500	0.500	0.187	- - -	0.016		○	
	SNGN432T02020	0.500	0.500	0.187	- - -	0.031	★	○	★
	SNGN433T02020	0.500	0.500	0.187	- - -	0.047	★	○	★
	SNGN434T02020	0.500	0.500	0.187	- - -	0.063	★		
	SNGN451T02020	0.500	0.500	0.313	- - -	0.016	★		
	SNGN452T02020	0.500	0.500	0.313	- - -	0.031	★		★
	SNGN453T02020	0.500	0.500	0.313	- - -	0.047	★		
	SNGN454T02020	0.500	0.500	0.313	- - -	0.063	★		
	SNGN552T02020	0.625	0.625	0.313	- - -	0.031	★		
	SNGN553T02020	0.625	0.625	0.313	- - -	0.047	★	○	★
	SNGN554T02020	0.625	0.625	0.313	- - -	0.063	★	○	
	SNGN652T03020	0.750	0.750	0.313	- - -	0.031	★		
	SNGN653T03020	0.750	0.750	0.313	- - -	0.047	★		
	SNGN654T03020	0.750	0.750	0.313	- - -	0.063	★		
	SNGN656T03020	0.750	0.750	0.313	- - -	0.094	★		
	SNGN676T04020	0.750	0.750	0.396	- - -	0.094	★		
	SNGN876T10015	1.000	1.000	0.396	- - -	0.094		★	
	SNGX452T02020	0.500	0.500	0.313	- - -	0.031		★	
	SNGX453T02020	0.500	0.500	0.313	- - -	0.047		★	
	SNGX454T02020	0.500	0.500	0.313	- - -	0.063		★	

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

APPLICABLE TOOLS

DSBNR/L
Kr: 75°

For SNGA

PSBNR/L
Kr: 75°

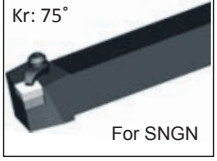
For SNGA

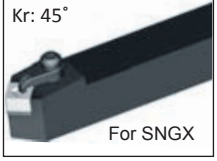
PSKNR/L
Kr: 75°

For SNGA

PSKNR/L
Kr: 75°

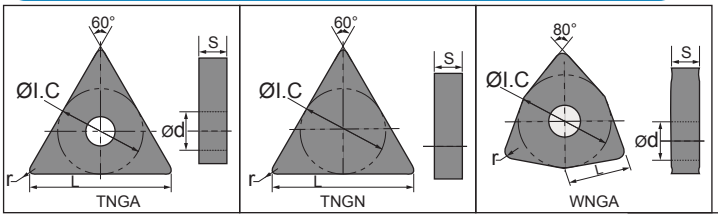
For SNGA

CSRNR/L
Kr: 75°

For SNGN

JSDNN
Kr: 45°

For SNGX

Ceramic inserts

TN/WNOO (Ceramic Inserts)



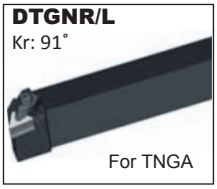
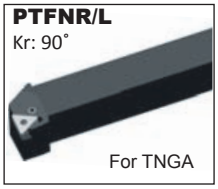
Good working condition | Normal working condition | Bad working condition

Workpiece material				
P	Steel	☺	☹	☺ ☹
K	Cast iron	☺	☺ ☹ ☹	☺ ☹

Inserts shape	Type	Dimensions (inch)					Grade		
		L	ØI.C	S	ød	r	CA1000	CN1000	CN2000
	TNGA331T01020	0.650	0.375	0.187	0.152	0.016		★	
	TNGA332T02020	0.650	0.375	0.187	0.152	0.031		★	
	TNGA333T02020	0.650	0.375	0.187	0.152	0.047		★	
	TNGA432T02020	0.866	0.500	0.187	0.203	0.031		★	
	TNGA433T02020	0.866	0.500	0.187	0.203	0.047		★	
	TNGA434T02020	0.866	0.500	0.187	0.203	0.063		★	
	TNGN331T02020	0.650	0.375	0.187	- - -	0.016	★		
	TNGN332T02020	0.650	0.375	0.187	- - -	0.031	★	○	★
	TNGN333T02020	0.650	0.375	0.187	- - -	0.047	★	○	★
	TNGN352T02020	0.650	0.375	0.313	- - -	0.031	★	○	★
	TNGN353T02020	0.650	0.375	0.313	- - -	0.047	★		
	TNGN354T02020	0.650	0.375	0.313	- - -	0.063	★		
	TNGN432T02020	0.866	0.500	0.187	- - -	0.031	★	○	★
	TNGN433T02020	0.866	0.500	0.187	- - -	0.047	★	○	★
	TNGN434T02020	0.866	0.500	0.187	- - -	0.063	★	○	★
	TNGN453T02020	0.866	0.500	0.313	- - -	0.047	★		
	TNGN454T02020	0.866	0.500	0.313	- - -	0.063	★		
	WNGA432T02020	0.342	0.500	0.187	0.203	0.031		★	
	WNGA433T02020	0.342	0.500	0.187	0.203	0.047		★	
	WNGA434T02020	0.342	0.500	0.187	0.203	0.063		★	

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

APPLICABLE TOOLS

DTGNR/L Kr: 91°  For TNGA	**PTFNR/L** Kr: 90°  For TNGA	**PTFNR/L** Kr: 90° For TNGA	**CTJNR/L** Kr: 93° For TNGN	**DWLNR/L** Kr: 95° For WNGA	**PWLNR/L** Kr: 95° For WNGA

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