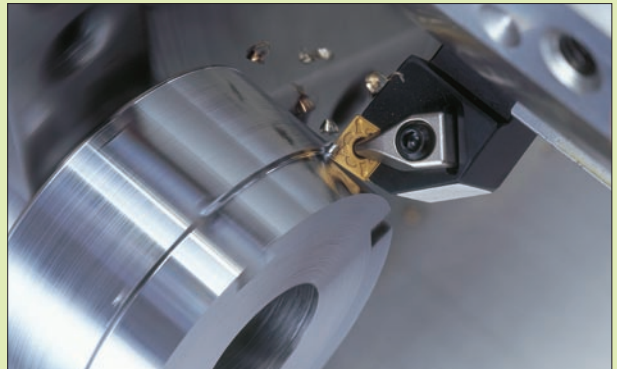


Indexable Inserts for Turning Negative / Positive Inserts / Ceramic

B



B1 ~ B152



Inserts



Solid CBN
Ceramic

Insert Identification Table.....	B2
Grade and Chipbreaker Selection.....	B4
Chipbreaker Selection.....	B10
Chipbreaker Application Table.....	B12

Negative Insert

C / 80°Diamond Type (With Hole).....	B14
C / 80°Diamond Type (Without Hole).....	B23
D / 55°Diamond Type (With Hole).....	B24
D / 55°Diamond Type (Without Hole).....	B32
R / Round Type (Without Hole).....	B33
S / Square Type (With Hole).....	B34
S / Square Type (Without Hole).....	B44
T / Triangular Type (With Hole).....	B48
T / Triangular Type (Without Hole).....	B60
V / 35°Diamond Type (With Hole).....	B63
W / Trigon Type (With Hole).....	B67

Positive Insert

C / 80°Diamond Type (With Hole).....	B72
D / 55°Diamond Type (With Hole).....	B88
R / Round Type (With Hole).....	B96
S / Square Type (With Hole).....	B98
S / Square Type (Without Hole).....	B105
T / Triangular Type (With Hole).....	B112
T / Triangular Type (Without Hole).....	B130
V / 35°Diamond Type (With Hole).....	B139
W / Trigon Type (With Hole).....	B148

Ceramic Negative Insert (With / Without Hole).....	B150
Ceramic Positive Insert(Without Hole).....	B151
Solid CBN.....	B152

Stock Markings

- ● : Standard stocked item
- ▲ : to be replace by new item
(Please confirm stock availability)
- * : Semi-standard stock
(Please confirm stock availability)
- ○ : Stock or planned stock
- blank : Made-to-order item
- : We cannot produce

Note:

Stocking policy may change without prior notice.
Please consult out sales representatives for actual
stock availability



Inserts Identification Table

Inserts

C

D

R

S

T

V

W

Solid CBN
Ceramic

C

①

① Insert Shape
Chart 1

N

②

② Relief Angle
Chart 2

M

③

③ Tolerance
Chart 3

G

④

④ Insert Hole of Breaker
Chart 4

Chart 1: Insert Shape

Symbol	Insert Shape	Angle
C		80°
D		55°
E		75°
F		50°
V		35°
R		Round
S		90°
T		60°
W		80°
A		85°
B		82°
K		55°
H		120°
O		135°
P		108°
L		90°
M		86°

Chart 2: Relief Angle

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P*	11°
O	Others

★ Inserts with a 10° relief angle are sometimes considered as "P"

Chart 3: Tolerance(mm)

Symbol	Nose Height	Inscribed Circle	Thickness
A	± 0.005	± 0.025	± 0.025
F	± 0.005	± 0.013	± 0.025
C	± 0.013	± 0.025	± 0.025
H	± 0.013	± 0.013	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.13
J*	± 0.005	± 0.05~± 0.15	± 0.025
K*	± 0.013	± 0.05~± 0.15	± 0.025
L*	± 0.025	± 0.05~± 0.15	± 0.025
M*	± 0.08~± 0.2	± 0.05~± 0.15	± 0.13
N*	± 0.08~± 0.2	± 0.05~± 0.15	± 0.025
U*	± 0.13~± 0.38	± 0.08~± 0.25	± 0.13

★ Generally, these inserts have unground side faces

Chart 4: Insert Hole or Breaker

Symbol	Hole	Hole Style	Chip Breaker	Shape	Symbol	Hole	Hole Style	Chip Breaker	Shape
N	No Hole	—	Nil		A	With Hole	Straight Hole	Nil	
R	No Hole	—	One Face		M	With Hole	Straight Hole	One Face	
F	No Hole	—	Both Faces		G	With Hole	Straight Hole	Both Faces	
W	With Hole	Straight hole with top end counter-sink (40°~60°)	Nil		B	With Hole	Straight hole with top end counter-sink (70°~90°)	Nil	
T	With Hole	Straight hole with top end counter-sink (40°~60°)	One Face		H	With Hole	Straight hole with top end counter-sink (70°~90°)	One Face	
Q	With Hole	Straight hole with top end counter-sink (40°~60°)	Nil		C	With Hole	Straight hole with top end counter-sink (70°~90°)	Nil	
U	With Hole	Straight hole with top end counter-sink (40°~60°)	Both Faces		J	With Hole	Straight hole with top end counter-sink (70°~90°)	Both Faces	

● Tolerance of Nose Height (M-Class)(mm)

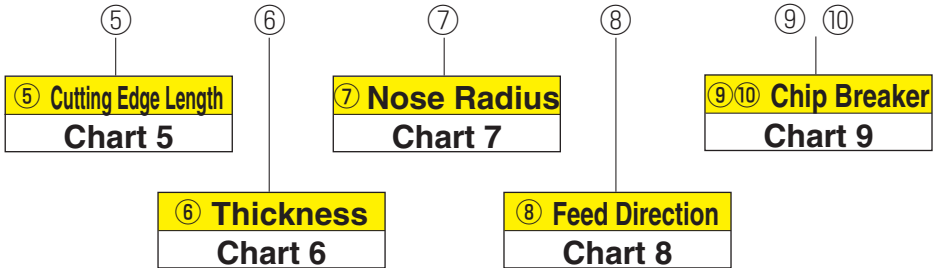
Inscribed Circle	Triangle	Square	80° Diamond	55° Diamond	35° Diamond	Round
6.35	± 0.08	± 0.08	± 0.08	± 0.11	± 0.16	—
9.525	± 0.08	± 0.08	± 0.08	± 0.11	± 0.16	—
12.70	± 0.13	± 0.13	± 0.13	± 0.15	—	—
15.875	± 0.15	± 0.15	± 0.15	± 0.18	—	—
19.05	± 0.15	± 0.15	± 0.15	± 0.18	—	—
25.40	± 0.18	± 0.18	± 0.18	—	—	—
31.75	—	± 0.20	—	—	—	—

● Tolerance of Inscribed Circle (M-Class)(mm)

Inscribed Circle	Triangle	Square	80° Diamond	55° Diamond	35° Diamond	Round
6.35	± 0.05	± 0.05	± 0.05	± 0.05	—	—
9.525	± 0.05	± 0.05	± 0.05	± 0.05	± 0.05	± 0.05
12.70	± 0.08	± 0.08	± 0.08	± 0.08	—	± 0.08
15.875	± 0.10	± 0.10	± 0.10	± 0.10	—	± 0.10
19.05	± 0.10	± 0.10	± 0.10	± 0.10	—	± 0.10
25.40	± 0.13	± 0.13	± 0.13	—	—	± 0.13
31.75	—	± 0.15	—	—	—	± 0.15

Inserts Identification Table

12 04 08 N - GU



Picture of insert shown as example
(ISO Cat. No.)

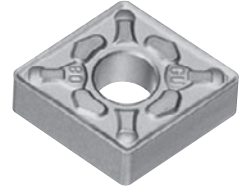


Chart 5: Cutting Edge Length (mm)

Shape	ISO	Cutting Edge	Inscribed Circle	Shape	ISO	Cutting Edge	Inscribed Circle	Shape	ISO	Cutting Edge	Inscribed Circle
C80° 	06	6.4	6.35	D55° 	07	7.7	6.35	W 	03	3.8	5.56
	08	8.0	7.94		11	11.6	9.525		04	4.3	6.35
	09	9.7	9.525		15	15.5	12.70		05	5.4	7.94
	12	12.9	12.70	19	19.4	15.875	06		6.5	9.525	
	16	16.1	15.875	V35° 	09	9.7	5.56		08	8.7	12.70
	19	19.3	19.05		11	11.1	6.35		10	10.9	15.875
			16		16.6	9.525					
S 	06	6.35	6.35	T 	06	6.9	3.97	R 	08	8.0	8.0
	S7	7.14	7.14		08	8.2	4.76		10	10.0	10.0
	07	7.94	7.94		09	9.6	5.56		12	12.0	12.0
	09	9.525	9.525		11	11.0	6.35		12	12.7	12.70
	12	12.7	12.70		16	16.5	9.525		15	15.875	15.875
	15	15.875	15.875		22	22.0	12.70		16	16.0	16.0
	19	19.05	19.05		27	27.5	15.875		19	19.05	19.05
	25	25.4	25.40		33	33.0	19.05		25	25.0	25.0
	31	31.75	31.75						25	25.4	25.40

Chart 6: Thickness

ISO	Thickness (mm)
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
06	6.35
07	7.94
09	9.52

Chart 7: Nose Radius

ISO	Nose Radius (mm)
00	Sharp Point
01	0.1
015	0.15
018	0.18
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
24	2.4
M0	Round Insert (Metric)
00	Round Insert (Metric)
00	Round Insert (Imperial)

Chart 8: Feed Direction

ISO	Direction
R	Right-hand
L	Left-hand
N	Neutral

Chart 9: Chip Breaker

Symbol	Process	Bumpy Type	Standard	Handed
F□	Fine Finishing To Finishing	FA, FL, FC FK, FP		FT, FX, FZ FY, FW
S□ L□	Light Cut	SC, SF, SP SS, SU, SX LU, LUW	EX	SD, SDW ST
G□ U□	General	GU, GUW UG, UP US, UX	UZ	UM
M□	Rough	MP, MU, MX	MC	MM HM
H□	Heavy	HG, HP, HU, HW		

Other specials	
Wide Chipbreaker	W
Double Positive Chipbreaker	GX
For Countersink	C
For Round Insert	RD, RP, RX
Special	AW, AG
Caburized Layer Removal	SV

Inserts

C

D

R

S

T

V

W

Solid CBN Ceramic

Grade and Chipbreaker Selection (1)

P
Steel

1 Fine Finishing

Ex. **GU Type** ← Chipbreaker
AC2000 ← Grade

Steel

Low Carbon Steel

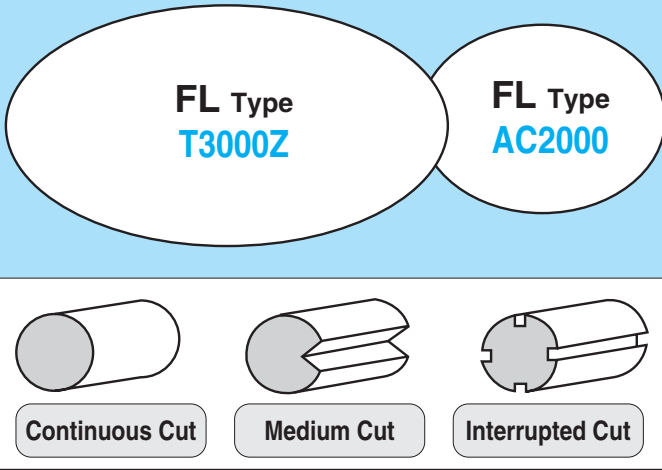
- SS400
- S10C
- SCM415
- SCr420
- SPHC
- etc.

Medium Carbon Steel

- S45C
- S55C
- SCM440
- etc.

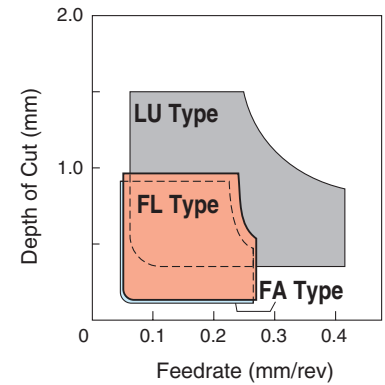
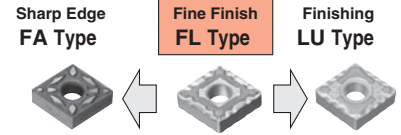
High Carbon Steel

- SNCM439
- etc.

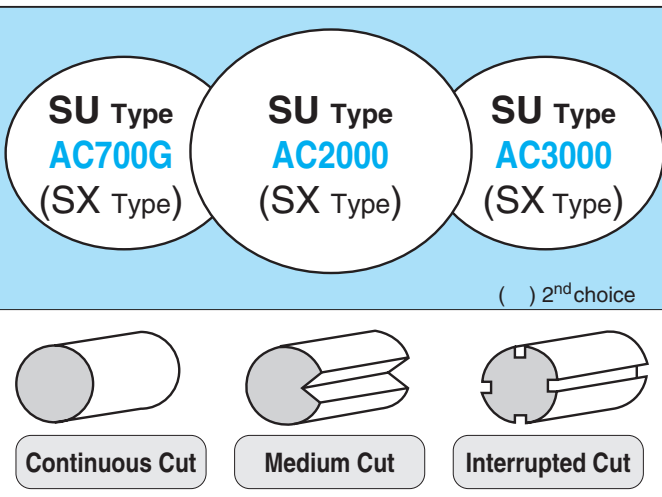


Work	HB	Cond Grade	Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
			T3000Z	AC2000		
Low Carbon Steel	180		190 ~ 300	210 ~ 330	0.05 ~ 0.25	0.2 ~ 1.0
Med. Carbon Steel	250		150 ~ 240	170 ~ 270		
High Carbon Steel	300		130 ~ 200	140 ~ 220		

● Chipbreaker Selection

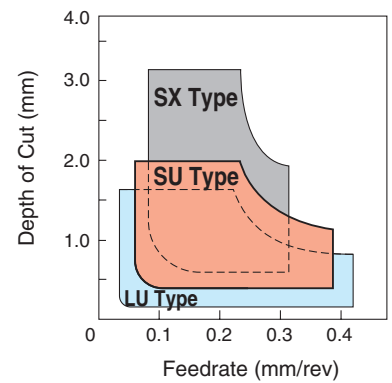
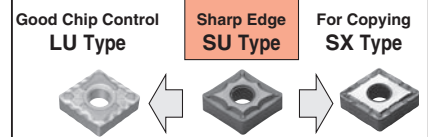


2 Finishing



Work	HB	Cond Grade	Cutting Speed (m/min)			Feedrate (mm/rev)	D.O.C. (mm)
			AC700G	AC2000	AC3000		
Low Carbon Steel	180		260 ~ 420	200 ~ 310	170 ~ 270	0.1 ~ 0.3	0.5 ~ 2.0
Med. Carbon Steel	250		210 ~ 340	160 ~ 250	140 ~ 220		
High Carbon Steel	300		170 ~ 280	130 ~ 210	110 ~ 190		

● Chipbreaker Selection



Inserts

C

D

R

S

T

V

W

Solid CBN Ceramic

P
Steel

Steel

Low Carbon Steel

- SS400
- S10C
- SCM415
- SCr420
- SPHC
- etc.

Medium Carbon Steel

- S45C
- S55C
- SCM440
- etc.

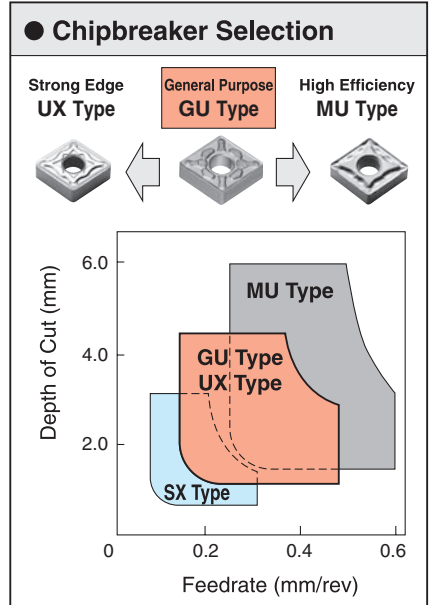
High Carbon Steel

- SNCM439
- etc.

3 Medium Cut

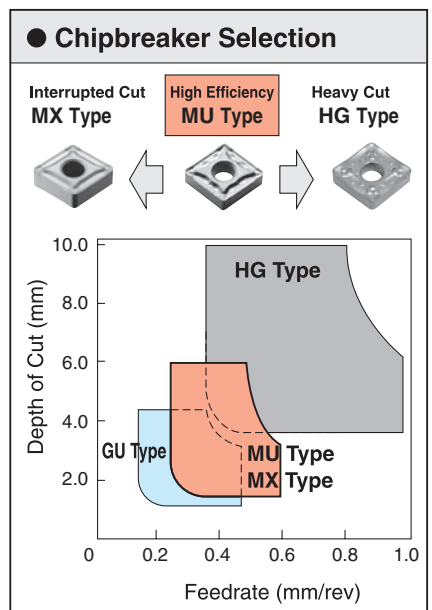
() 2nd choice

Work	HB	Cond Grade	Cutting Speed (m/min)			Feedrate (mm/rev)	D.O.C. (mm)
			AC700G	AC2000	AC3000		
Low Carbon Steel	180		250 ~ 390	180 ~ 280	160 ~ 250	0.2 ~ 0.5	1.0 ~ 4.0
Med. Carbon Steel	250		200 ~ 310	150 ~ 230	130 ~ 200		
High Carbon Steel	300		170 ~ 260	120 ~ 190	100 ~ 170		



4 Roughing

Work	HB	Cond Grade	Cutting Speed (m/min)			Feedrate (mm/rev)	D.O.C. (mm)
			AC700G	AC2000	AC3000		
Low Carbon Steel	180		210 ~ 340	160 ~ 250	140 ~ 220	0.3 ~ 0.6	2.0 ~ 6.0
Med. Carbon Steel	250		170 ~ 280	130 ~ 200	110 ~ 160		
High Carbon Steel	300		140 ~ 230	110 ~ 170	90 ~ 150		



Inserts

C

D

R

S

T

V

W

Solid CBN Ceramic

Grade and Chipbreaker Selection (2)

M
Stainless Steel

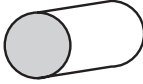
1 Finishing

Stainless Steel

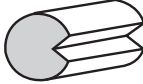
- SUS304
- SUS316
- etc.

SU Type
AC610M

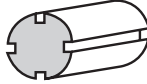
SU Type
AC630M



Continuous Cut



Medium Cut



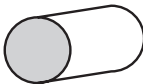
Interrupted Cut

Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
AC610M	AC630M		
160 ~ 260	140 ~ 220	0.1 ~ 0.2	0.2 ~ 1.0

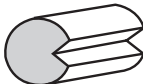
2 Medium Cut

EX Type
AC630M

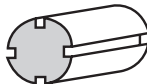
GU Type
AC3000



Continuous Cut



Medium Cut



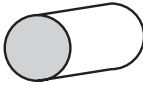
Interrupted Cut

Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
AC630M	AC3000		
120 ~ 190	130 ~ 200	0.1 ~ 0.3	0.5 ~ 2.0

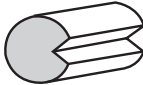
3 Roughing

MU Type
AC630M

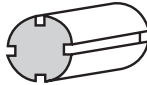
MU Type
AC3000



Continuous Cut

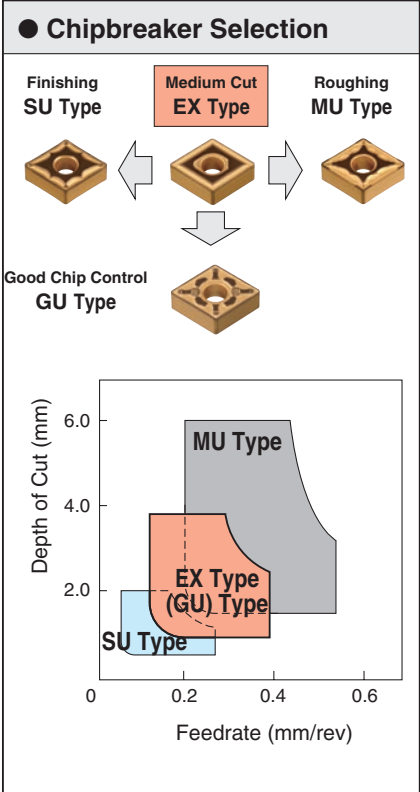


Medium Cut



Interrupted Cut

Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
AC630M	AC3000		
110 ~ 180	120 ~ 190	0.2 ~ 0.4	1.5 ~ 4.0



Inserts

C

D

R

S

T

V

W

Solid CBN
Ceramic



Cast Iron

- FC250
- FCD450
- etc.

1 High Speed Finishing () 2nd Choice

FC	BN700 (BNS800)
FCD	BN500
<p>Continuous Cut Medium Cut Interrupted Cut</p>	

Work	Cond HB	Cutting Speed (m/min)	Feedrate (mm/rev)	D.O.C. (mm)		
				BN700	BN500	BNS800
FC	200	200 ~ 2000	0.1 ~ 0.5	~ 1.0	—	~ 4.0
FCD	250	100 ~ 350	0.1 ~ 0.4	—	~ 0.5	—

2 Finishing~Medium Cut () 2nd Choice

UZ Type AC410K (EH10Z,T110A)	UX Type AC410K	UX Type AC700G
Continuous Cut	Medium Cut	Interrupted Cut

Work	Cond HB	Cond Grade	Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
			AC410K	AC700G		
FC	200	200	230 ~ 360	180 ~ 300	0.1 ~ 0.3	0.5 ~ 3.0
FCD	250	250	200 ~ 310	160 ~ 260		

3 Roughing

UZ Type AC410K	UX Type AC700G	NO Breaker AC700G
Continuous Cut	Medium Cut	Interrupted Cut

Work	Cond HB	Cond Grade	Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
			AC410K	AC700G		
FC	200	200	190 ~ 290	150 ~ 240	0.3 ~ 0.6	2.0 ~ 6.0
FCD	250	250	160 ~ 250	130 ~ 210		

● Chipbreaker Selection

Sharp Edge

4°

UX Type

0°

Strong Edge

No breaker

Grade and Chipbreaker Selection (3)

Inserts



Non-Ferrous Metal

Aluminum Alloy (below Si13%)

- A6061
- ADC12
- etc.

C

Aluminum Alloy (Si13% and above)

- A390
- etc.

D

R

Brass

S

T

V

W

Solid CBN Ceramic

SumiDia
DA2200

AG Type
H1

High Speed Finishing

Finishing

Roughing

Process	Cond Grade	Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
		DA2200	H1		
High Speed Finishing	Al. Alloy (below Si13%)	~2000		0.05 ~ 0.2	0.1 ~ 3.0
	Al. Alloy (Si 13% and above)	~1000		0.05 ~ 0.2	0.1 ~ 3.0
Finishing			400 ~ 1000	0.1 ~ 0.3	0.3 ~ 1.5
Roughing			150 ~ 500	0.1 ~ 0.5	1 ~ 5

● Chipbreaker Selection

High Speed
DA2200

↔

General
AG Type

SumiBoron
BN700

EX Type
EH510Z

EX Type
EH520Z

High Speed Finishing

Finishing

Roughing

Process	Cond Grade	Cutting Speed (m/min)			Feedrate (mm/rev)	D.O.C. (mm)
		BN700	EH510Z	EH520Z		
High Speed Finishing		120 ~ 170			0.05 ~ 0.2	0.1 ~ 1.0
Finishing			30 ~ 70	20 ~ 50	0.1 ~ 0.25	0.3 ~ 1.5
Roughing			30 ~ 70	20 ~ 50	0.1 ~ 0.3	1 ~ 5

● Chipbreaker Selection

Finishing
SU Type

Light-Medium Cut
EX Type

Roughing
MU Type



Hardened Steel

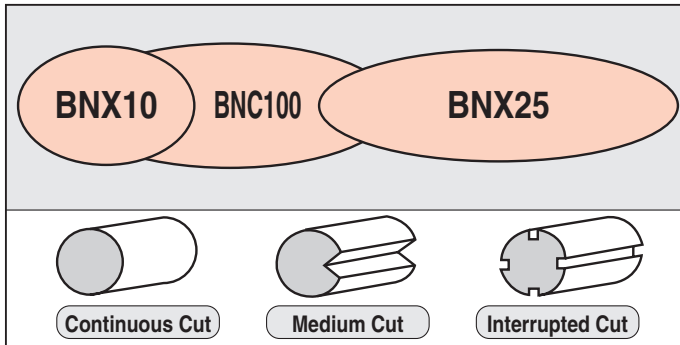
General~Medium Alloy Steel

- S55C
- SCM420
- SCr440
- etc.

High Alloy Steel

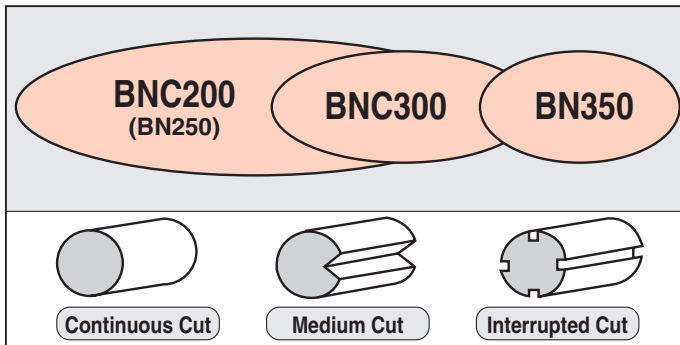
- SUJ2
- SKD61
- SKH
- etc.

1 High Speed Finishing



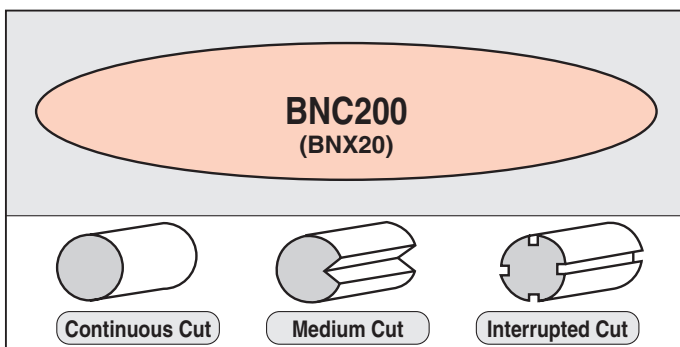
Cutting Speed (m/min)			Feedrate (mm/rev)	D.O.C. (mm)
BNX10	BNC100	BNX25		
120 ~ 300	120 ~ 300	120 ~ 220	0.03 ~ 0.15	0.03 ~ 0.20

2 Finishing () 2nd Choice



Cutting Speed (m/min)				Feedrate (mm/rev)	D.O.C. (mm)
BNC200	BN250	BNC300	BN350		
50 ~ 200	50 ~ 150	50 ~ 150	50 ~ 150	0.03 ~ 0.20	0.03 ~ 0.30

3 High Efficiency (Removal of Carburized Layer)



Cutting Speed (m/min)		Feedrate (mm/rev)	D.O.C. (mm)
BNC200	BNX20		
50 ~ 170	70 ~ 170	0.05 ~ 0.30	0.05 ~ 0.50



Chipbreaker Selection

Inserts

C

D

R

S

T

V

W

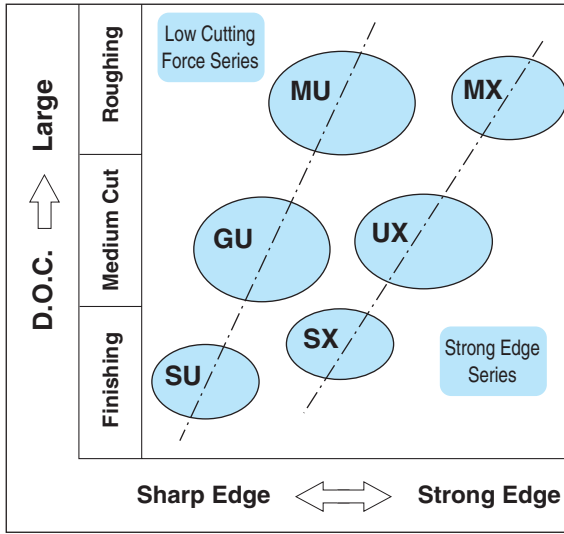
Solid CBN
Ceramic

Negative Type
Positive Type

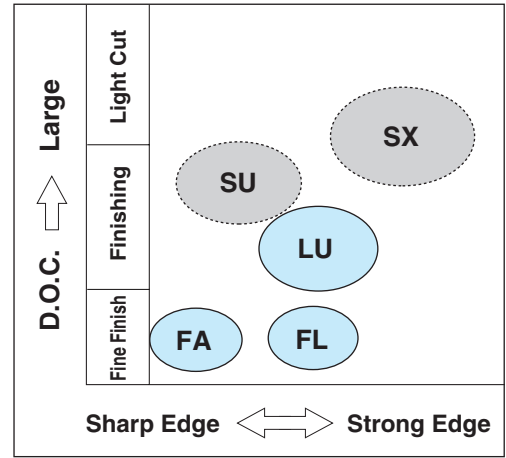
GU Type (Ex.)



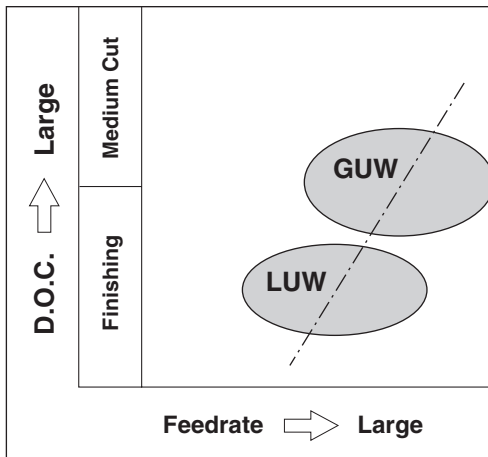
1 Main Chipbreaker for Steel



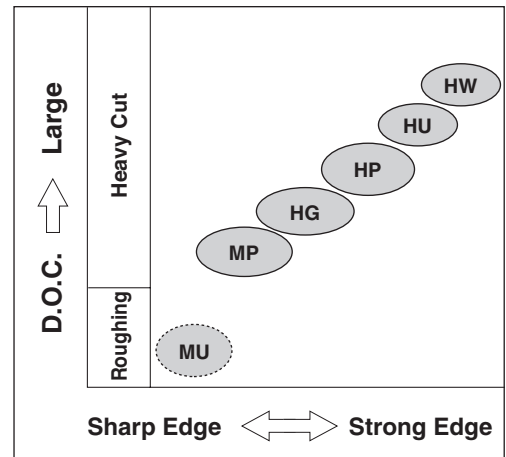
2 Sub-Chipbreaker for Finishing



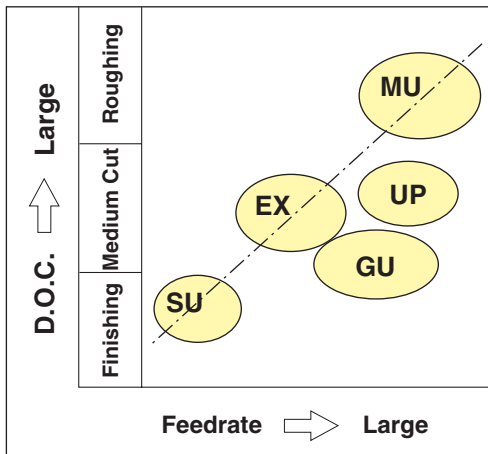
3 Wiper Insert (High Efficiency)



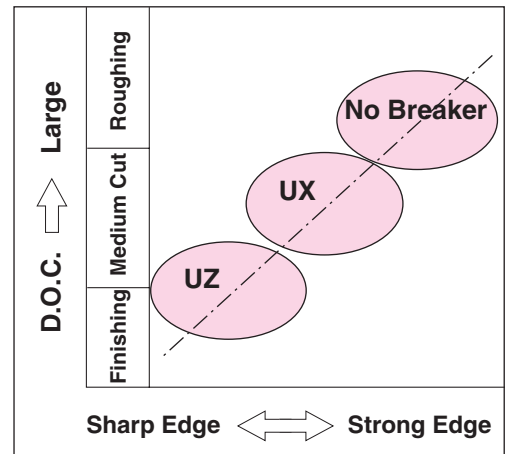
4 Heavy Cutting



5 Stainless Steel, Exotic Alloy



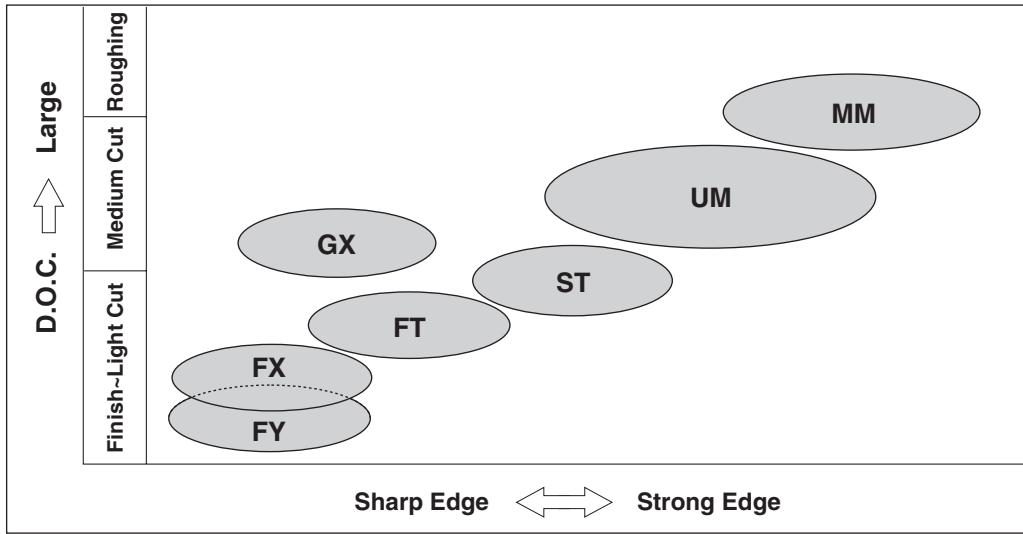
6 Cast Iron



Chipbreaker Selection

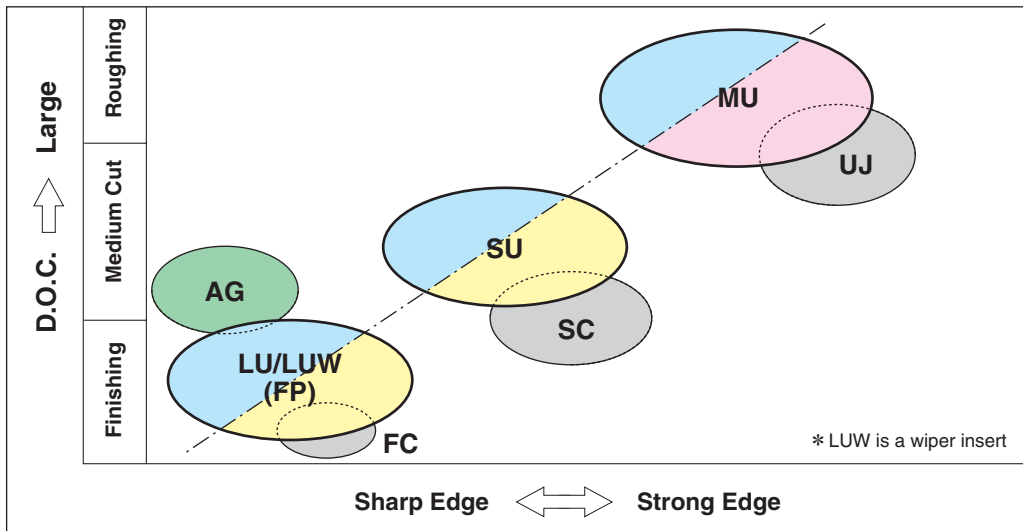
Negative Type
Handed Type

UM Type (Ex.)



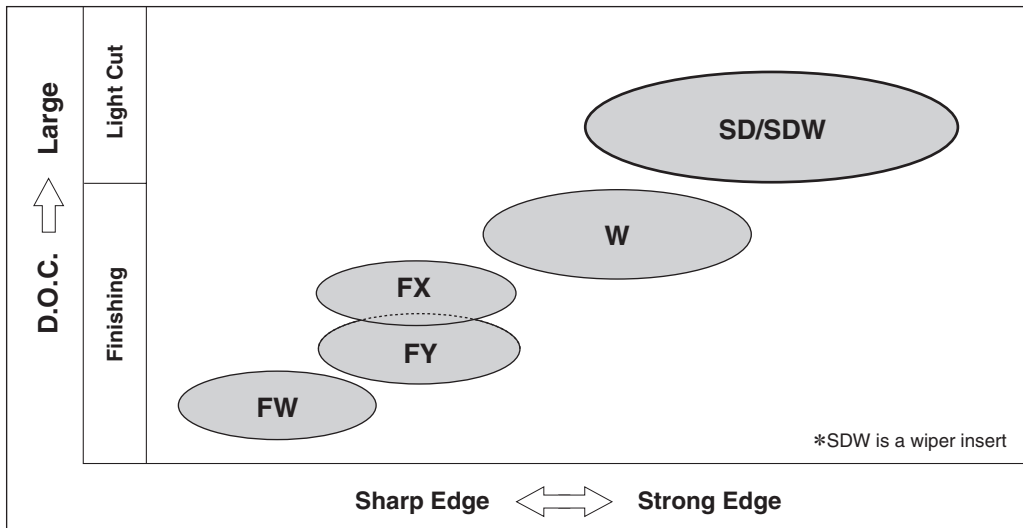
Positive Type
Bumpy Breaker

SU Type (Ex.)



Positive Type
Handed Type

FY Type (Ex.)







Inserts



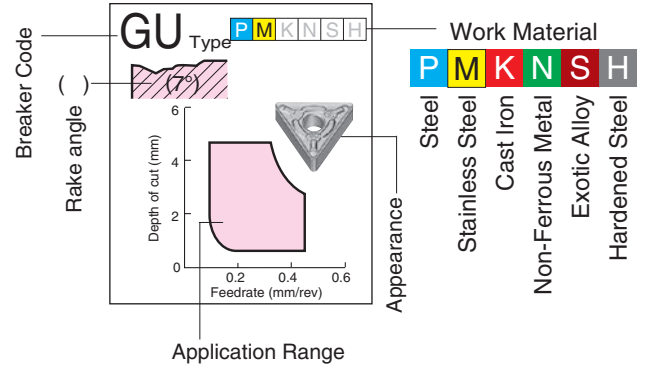
Solid CBN
Ceramic

Chipbreaker Application Table

Negative Type



- ( Bumpy breaker  Standard breaker  Handed breaker)
- ( SUMIBORON Break Master)


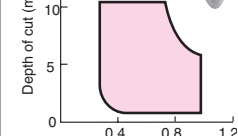

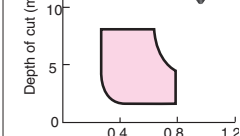
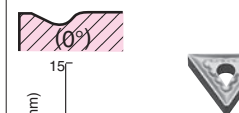
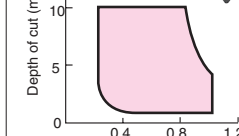
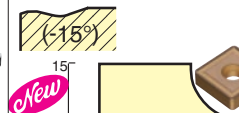
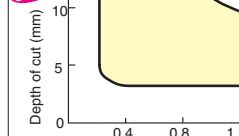

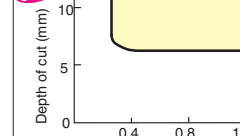
(Legend)



C	D	R	S	T	V	W	Solid CBN Ceramic	Fine Finishing	FA Type P M K N S H 	FL Type P M K N S H 		
									SU Type P M K N S H 	LU Type P M K N S H 	LUW Type P M K N S H 	FY Type P M K N S H
S	T	V	W	Solid CBN Ceramic	Light~Medium Cut	Medium Cut	Medium~Rough Cut	SX Type P M K N S H 	EX Type P M K N S H 	UP Type P M K N S H 	Carburized Layer Removal	SV Type P M K N S H
								GU Type P M K N S H 	GUW Type P M K N S H 	UX Type P M K N S H 		UG Type P M K N S H
S	T	V	W	Solid CBN Ceramic	Light~Medium Cut	Medium Cut	Medium~Rough Cut	MU Type P M K N S H 	MX Type P M K N S H 	UZ Type P M K N S H 	HM Type P M K N S H 	MM Type P M K N S H

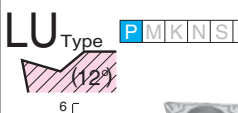
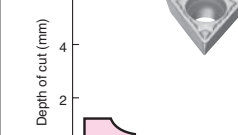
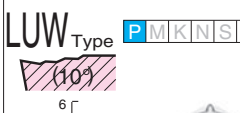
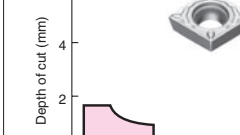
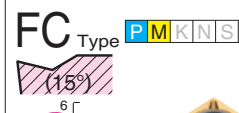
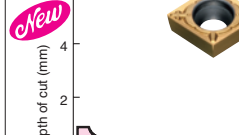
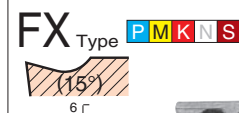
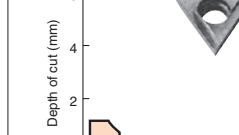
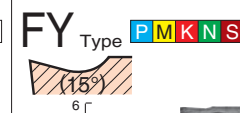
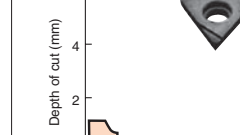
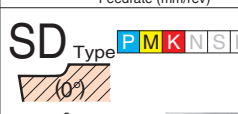
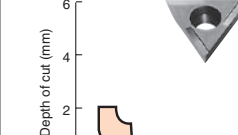

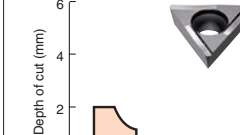
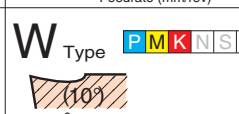
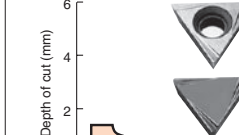
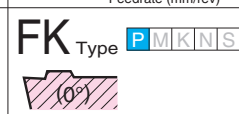
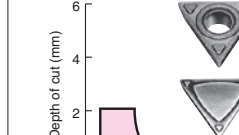
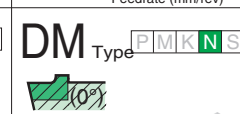
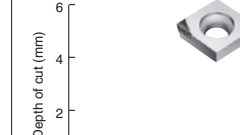
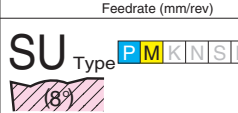
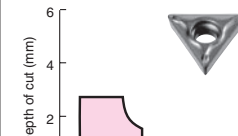
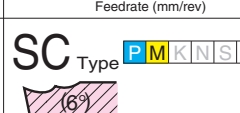
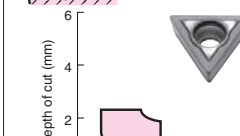
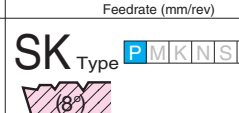
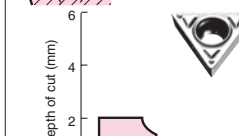
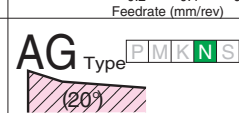
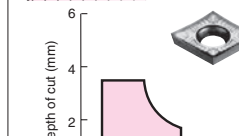
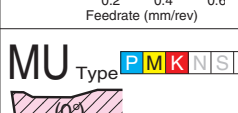
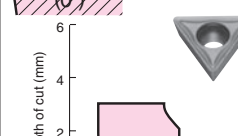
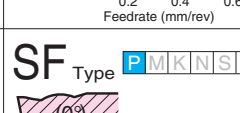

Negative Type

( Bumpy breaker  Standard breaker)

Rough~Heavy Cut	HG Type P M K N S H  	MP Type P M K N S H  	HP Type P M K N S H  	HU Type P M K N S H  	HW Type P M K N S H  
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Positive Type

( Bumpy breaker  Standard breaker  Handed breaker  SUMIDIA/Break Master)

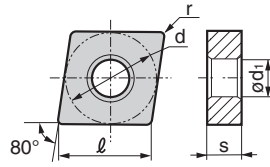
Finishing	LU Type P M K N S H  	LW Type P M K N S H  	FC Type P M K N S H  	FX Type P M K N S H  	FY Type P M K N S H  	
	Finish~Light Cut	SD Type P M K N S H  	SDW Type P M K N S H  	W Type P M K N S H  	FK Type P M K N S H  	DM Type P M K N S H  
		Light Cut	SU Type P M K N S H  	SC Type P M K N S H  	SK Type P M K N S H  	AG Type P M K N S H  
	Light~Medium Cut		MU Type P M K N S H  	SF Type P M K N S H  	Rough Cut	

- Inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

80° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

CN 80° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CN 0903

- ϕ : 9.7
- ϕ s : 3.18
- ϕ d : 9.525
- ϕ d1 : 3.81

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders **C9** Boring Bars **D42**

Shape	ISO Cat. No.	r
LU Rake Angle 10°	CNMG 090304N-LU 090308N-LU	0.4 0.8
SU Rake Angle 13°	CNMG 090304N-SU 090308N-SU	0.4 0.8
GU Rake Angle 7°	CNMG 090304N-GU 090308N-GU	0.4 0.8
UX Rake Angle 0°	CNMG 090304N-UX 090308N-UX	0.4 0.8
UG Rake Angle 4°	CNMG 090304N-UG 090308N-UG	0.4 0.8

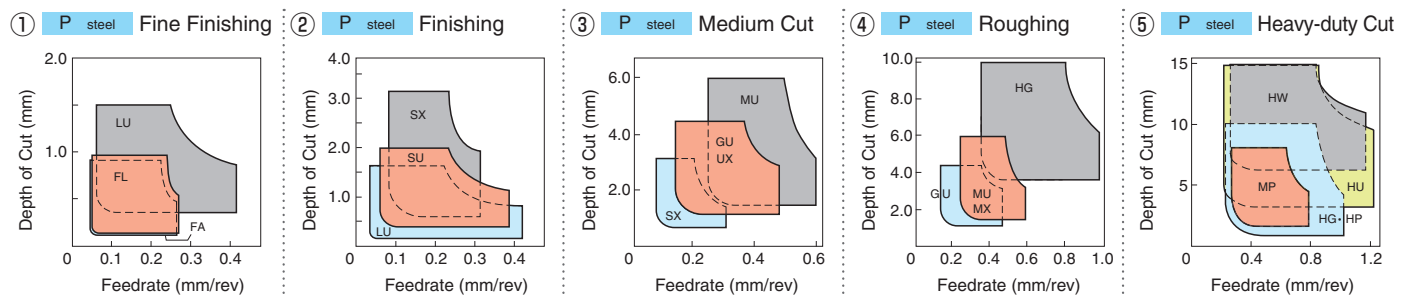
CN 09T3

- ϕ : 9.7
- ϕ s : 3.97
- ϕ d : 9.525
- ϕ d1 : 3.81

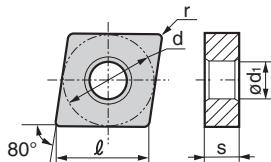
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SU Rake Angle 13°	CNMG 09T304N-SU 09T308N-SU	0.4 0.8
UG Rake Angle 4°	CNMG 09T304N-UG 09T308N-UG	0.4 0.8

Chipbreaker Application Range Map



CN 80° Diamond Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CN 0904

• l : 9.7 • s : 4.76
 • ϕd : 9.525 • $\phi d1$: 3.81

Page for Applicable Holder External Holders **C9**

Shape	ISO Cat. No.	r
SU Finishing Rake Angle 13°	CNMG 090404N-SU 090408N-SU	0.4 0.8
UG Medium cut Rake Angle 4°	CNMG 090404N-UG 090408N-UG	0.4 0.8

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

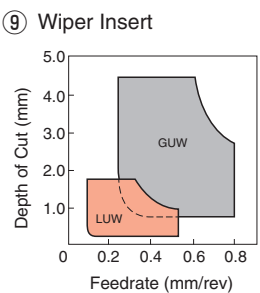
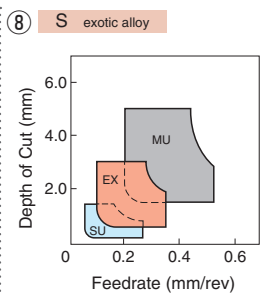
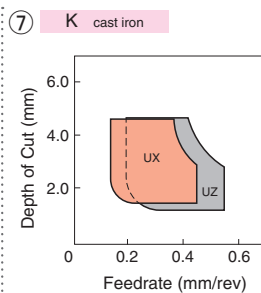
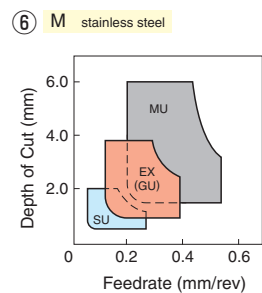
CN 1204

• l : 12.9 • s : 4.76
 • ϕd : 12.7 • $\phi d1$: 5.16

Page for Applicable Holder External Holders **C9 C10** Boring Bars **D42**

Shape	ISO Cat. No.	r
FA Fine finishing Rake Angle 20°	CNMG 120402N-FA 120404N-FA 120408N-FA	0.2 0.4 0.8
FL Fine finishing Rake Angle 10°	CNMG 120404N-FL 120408N-FL	0.4 0.8
LU Finishing Rake Angle 10°	CNMG 120402N-LU 120404N-LU 120408N-LU 120412N-LU	0.2 0.4 0.8 1.2
LUW Finishing Rake Angle 10°	CNMG 120404N-LUW 120408N-LUW 120412N-LUW	0.4 0.8 1.2
SP Rake Angle 13°	CNMG 120404N-SP 120408N-SP	0.4 0.8

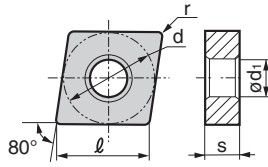
Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



80° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

CN 80° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CN 1204

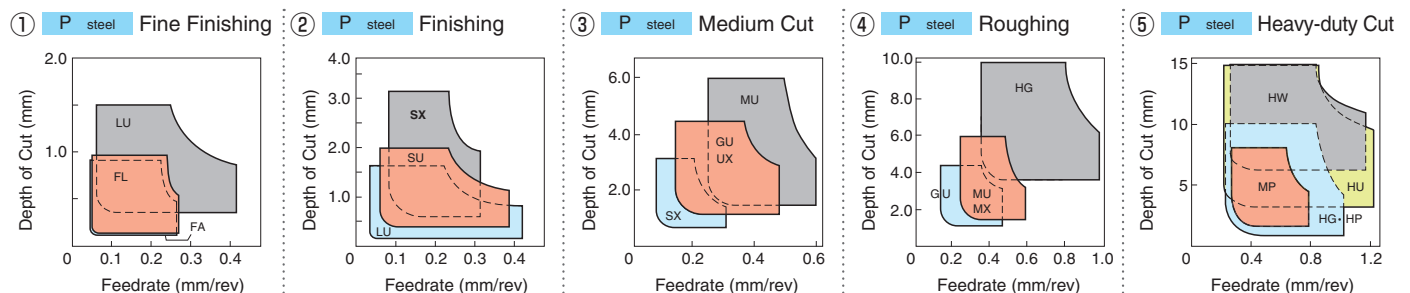
- l : 12.9
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.16

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders **C9** **C10** Boring Bars **D42**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C							
SU Rake Angle 13°	CNMG 120402N-SU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	CNMG 120404N-SU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	CNMG 120408N-SU	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	CNMG 120412N-SU	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
SU Rake Angle 13°	CNGG 120402N-SU	0.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○					
	CNGG 120404N-SU	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
	CNGG 120408N-SU	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
SX Rake Angle 3°	CNMG 120404N-SX	0.4	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○					
	CNMG 120408N-SX	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
	CNMG 120412N-SX	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
EX Rake Angle 16°	CNMG 120404N-EX	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
	CNMG 120408N-EX	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
	CNMG 120412N-EX	1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
GU Rake Angle 7°	CNMG 120404N-GU	0.4	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
	CNMG 120408N-GU	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
	CNMG 120412N-GU	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
	CNMG 120416N-GU	1.6	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
GUW Rake Angle 0°	CNMG 120408N-GUW	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
	CNMG 120412N-GUW	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
UX Rake Angle 0°	CNMG 120404N-UX	0.4	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
	CNMG 120408N-UX	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
	CNMG 120412N-UX	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
	CNMG 120416N-UX	1.6	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
UG Rake Angle 4°	CNMG 120404N-UG	0.4	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
	CNMG 120408N-UG	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	CNMG 120412N-UG	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	CNMG 120416N-UG	1.6	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UP Rake Angle 10°	CNMG 120404N-UP	0.4	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	CNMG 120408N-UP	0.8	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	CNMG 120412N-UP	1.2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map

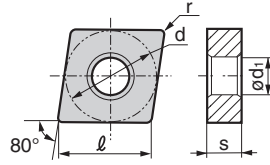


80° DIAMOND TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

CN 80° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- App. Map: Reference no. of chipbreaker Application Range Map (at the bottom of this page).
- 7: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CN 1204

- l : 12.9 • s : 4.76
- ϕd : 12.7 • $\phi d1$: 5.16

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C9** **C10**

Boring Bars **D42**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	NU-CNMA 120402 <i>new</i>	T-NU-CNMA 120402 <i>new</i>	0.2
	120404	120404	0.4
	120408	120408	0.8
	120412	120412	1.2
2-cornered	NS-CNMA 120404	T-NS-CNMA 120404	0.4
	120408	120408	0.8
	120412	120412	1.2
	2-cornered	2NU-CNGA 120404	T- 2NU-CNGA 120404
120408		120408	0.8
120412		120412	1.2
2NS-CNGA 120404		T- 2NS-CNGA 120404	0.4
120408		120408	0.8
120412		120412	1.2
2-cornered	2NU-CNGA 120404F <i>Sharp Edge Type</i>	T- 2NU-CNGA 120404F	0.4
	120408F	120408F	0.8
	120412F	120412F	1.2
	2NU-CNGA 120404T <i>Strong Edge Type</i>	T- 2NU-CNGA 120404T	0.4
	120408T	120408T	0.8
	120412T	120412T	1.2

※Depth-of-cut for one-use type is 0.5mm or less.

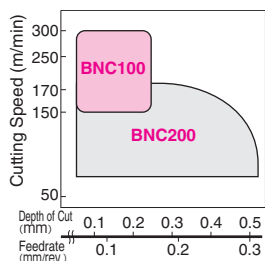
● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
2-cornered	2NC-CNGA 120404 <i>new</i>		0.4
	120408 <i>new</i>		0.8
4-cornered	4NC-CNGA 120404		0.4
	120408		0.8
	120412		1.2
	4NC-CNGA 120404W <i>Wiper Insert</i>		0.4
	120408W		0.8
	120412W		1.2
4-cornered	4NC-CNGG 120404N-SV <i>Rake Angle -35°</i>		0.4
	120408N-SV		0.8
	120412N-SV		1.2

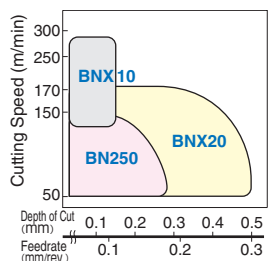
※Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON Application Range Map

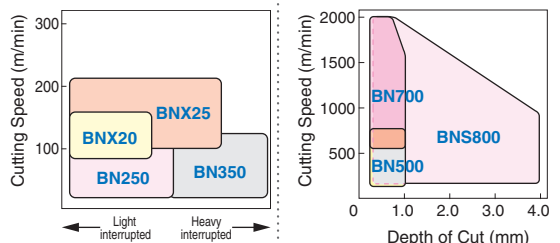
(A) Continuous Cut of Hardened Steel



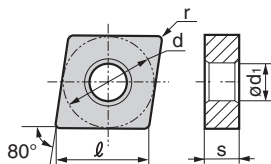
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



CN 80° Diamond Type
Negative
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

CN 1204

- l : 12.9 • s : 4.76
- phi d : 12.7 • phi d1 : 5.16

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C9** **C10**

Boring Bars **D42**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application																						
				P	M	K	N	S	H	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200			
1-cornered	CNMA 120404 120408 120412		0.4																							
			0.8																							
			1.2																							
Solid	CNGA 120408 120412		0.8																							
			1.2																							

● SUMIDIA (NF Type)

Shape	NF-CNMX ISO Cat. No.	r	Application																							
			P	M	K	N	S	H	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200				
1-cornered	NF-CNMX 120402 120404 120408 120412	0.2																								
		0.4																								
		0.8																								
		1.2																								

● SUMIDIA (One-use Type)

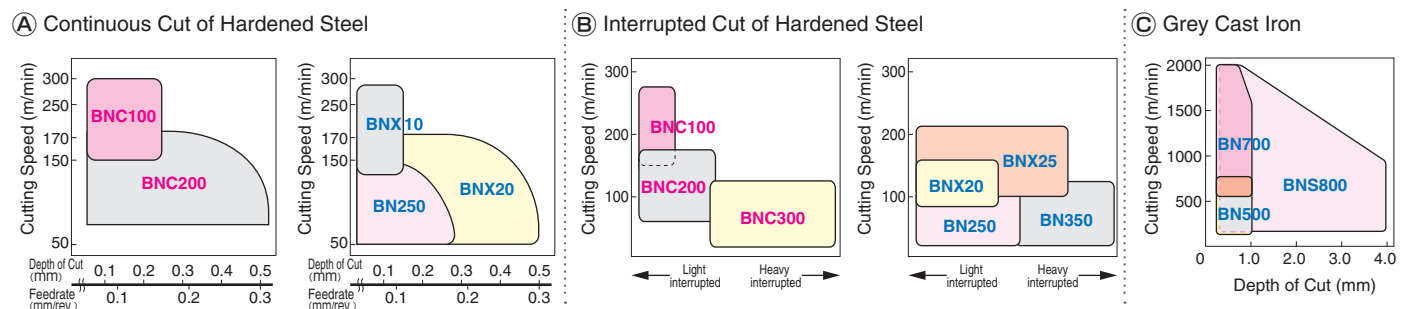
Shape	NU-CNMX ISO Cat. No.	r	Application																							
			P	M	K	N	S	H	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200				
1-cornered	NU-CNMX 120402 120404 120408 120412	0.2																								
		0.4																								
		0.8																								
		1.2																								

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

Shape	CNMX ISO Cat. No.	r	Application																							
			P	M	K	N	S	H	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200				
1-cornered	CNMX 120404 120408 120412	0.4																								
		0.8																								
		1.2																								

SUMIBORON Application Range Map



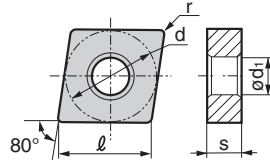
80° DIAMOND TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

CN

80° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- ③ Name of chipbreaker
- ④ Reference no. of chipbreaker
- ⑤ Application Range Map (at the bottom of this page).
- ⑦ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CN 1606

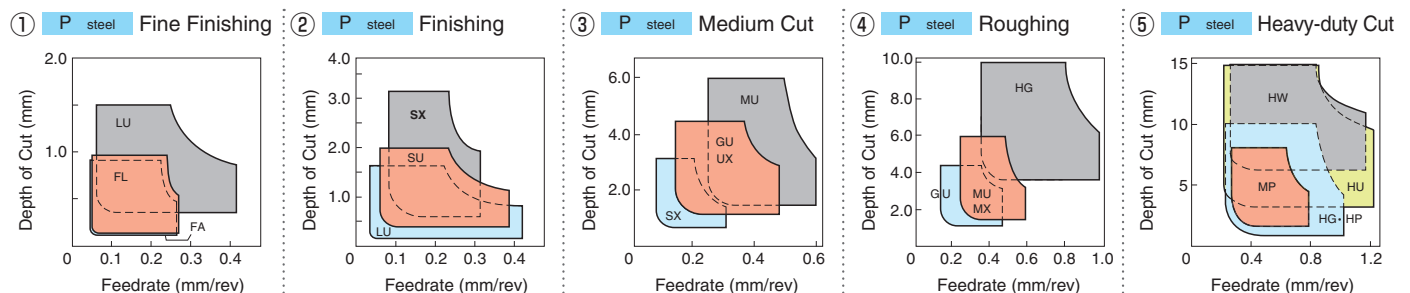
- ϕ : 16.1
- ϕ s : 6.35
- ϕ d : 15.875
- ϕ d1 : 6.35

Page for Applicable Holder External Holders **C9**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
GU Rake Angle 7°	CNMG 160608N-GU 160612N-GU 160616N-GU	0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
UX Rake Angle 0°	CNMG 160608N-UX 160612N-UX 160616N-UX	0.8 1.2 1.6	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
UG Rake Angle 4°	CNMG 160608N-UG 160612N-UG 160616N-UG	0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
UP Rake Angle 10°	CNMG 160608N-UP 160612N-UP	0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
CNMA 160608 160612		0.8 1.2	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
MU Rake Angle 4°	CNMG 160608N-MU 160612N-MU 160616N-MU	0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
MX Rake Angle -15°	CNMG 160608N-MX 160612N-MX 160616N-MX	0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
UZ Rake Angle 4°	CNMG 160608N-UZ 160612N-UZ 160616N-UZ	0.8 1.2 1.6	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
MP Rake Angle 0°	CNMM 160608N-MP 160612N-MP 160616N-MP	0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
HG Rake Angle 0°	CNMM 160612N-HG 160616N-HG	1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map



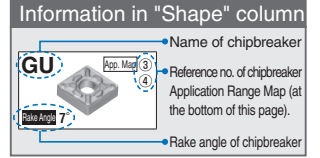
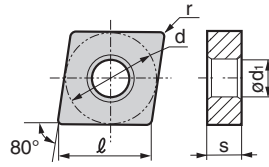
80° DIAMOND TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

CN

80° Diamond Type
Negative
With Insert Hole



Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Negative Inserts

CN 1906

• l : 19.3 • s : 6.35
• ϕd : 19.05 • $\phi d1$: 7.94

Page for Applicable Holder External Holders **C9** Boring Bars **D42**

Condition	Coated Carbide											Coated Cermet	Cermets			Carbide			Ceramic																	
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C							
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Shape	MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
ISO Cat. No.	CNMM 190608N-MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
r	0.8																	1.2			1.6		2.4													
Heavy cut	HG																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
ISO Cat. No.	CNMM 190612N-HG																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
r	1.2																	1.6			2.4															
Heavy cut	HP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
ISO Cat. No.	CNMM 190608N-HP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
r	0.8																	1.2			1.6		2.4													

C

D

R

S

T

V

W

Solid CBN Ceramic

CN 2507

• l : 25.8 • s : 7.94
• ϕd : 25.4 • $\phi d1$: 9.2

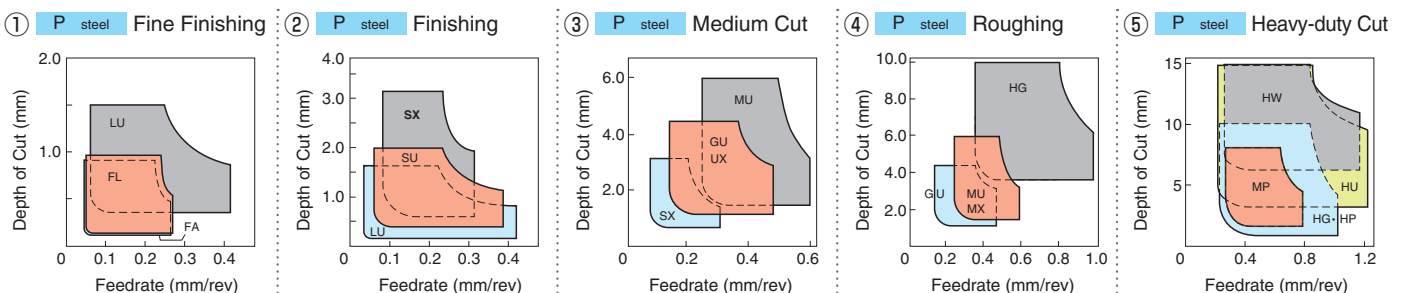
Condition	Coated Carbide											Coated Cermet	Cermets			Carbide			Ceramic																	
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C							
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Shape	MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
ISO Cat. No.	CNMM 250724N-MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
r	2.4																																			

CN 2509

• l : 25.8 • s : 9.52
• ϕd : 25.4 • $\phi d1$: 9.2

Condition	Coated Carbide											Coated Cermet	Cermets			Carbide			Ceramic																	
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C							
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○						
Shape	MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
ISO Cat. No.	CNMM 250924N-MP																	ST10P			ST20E		A30		G10E		H1		NS260		NS260C		NB90S		NB100C	
r	2.4																																			

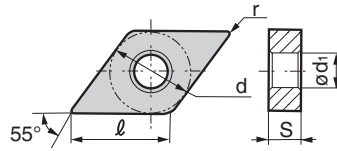
Chipbreaker Application Range Map



55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN 55° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

DN 1104

- l : 11.6
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 3.81

Page for Applicable Holder | External Holders **C12** Boring Bars **D43**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic																																															
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C																																				
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○																																			
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○																																			
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○																																			
Shape	<table border="1"> <thead> <tr> <th>Shape</th> <th>ISO Cat. No.</th> <th>r</th> </tr> </thead> <tbody> <tr> <td rowspan="2">LU Rake Angle 12°</td> <td>DNMG 110404N-LU</td> <td>0.4</td> </tr> <tr> <td>110408N-LU</td> <td>0.8</td> </tr> <tr> <td rowspan="2">GU Rake Angle 7°</td> <td>DNMG 110404N-GU</td> <td>0.4</td> </tr> <tr> <td>110408N-GU</td> <td>0.8</td> </tr> <tr> <td>UX Rake Angle 0°</td> <td>DNMG 110408N-UX</td> <td>0.8</td> </tr> <tr> <td rowspan="2">UG Rake Angle 4°</td> <td>DNMG 110404N-UG</td> <td>0.4</td> </tr> <tr> <td>110408N-UG</td> <td>0.8</td> </tr> <tr> <td rowspan="4">UM Rake Angle 14°</td> <td>DNGG 110404R-UM</td> <td>0.4</td> </tr> <tr> <td>110404L-UM</td> <td>0.4</td> </tr> <tr> <td>110408R-UM</td> <td>0.8</td> </tr> <tr> <td>110408L-UM</td> <td>0.8</td> </tr> <tr> <td rowspan="2">DNGA 110404 </td> <td>DNGA 110404</td> <td>0.4</td> </tr> <tr> <td>110408</td> <td>0.8</td> </tr> </tbody> </table>																														Shape	ISO Cat. No.	r	LU Rake Angle 12°	DNMG 110404N-LU	0.4	110408N-LU	0.8	GU Rake Angle 7°	DNMG 110404N-GU	0.4	110408N-GU	0.8	UX Rake Angle 0°	DNMG 110408N-UX	0.8	UG Rake Angle 4°	DNMG 110404N-UG	0.4	110408N-UG	0.8	UM Rake Angle 14°	DNGG 110404R-UM	0.4	110404L-UM	0.4	110408R-UM	0.8	110408L-UM	0.8	DNGA 110404 	DNGA 110404	0.4	110408	0.8
Shape	ISO Cat. No.	r																																																															
LU Rake Angle 12°	DNMG 110404N-LU	0.4																																																															
	110408N-LU	0.8																																																															
GU Rake Angle 7°	DNMG 110404N-GU	0.4																																																															
	110408N-GU	0.8																																																															
UX Rake Angle 0°	DNMG 110408N-UX	0.8																																																															
UG Rake Angle 4°	DNMG 110404N-UG	0.4																																																															
	110408N-UG	0.8																																																															
UM Rake Angle 14°	DNGG 110404R-UM	0.4																																																															
	110404L-UM	0.4																																																															
	110408R-UM	0.8																																																															
	110408L-UM	0.8																																																															
DNGA 110404 	DNGA 110404	0.4																																																															
	110408	0.8																																																															

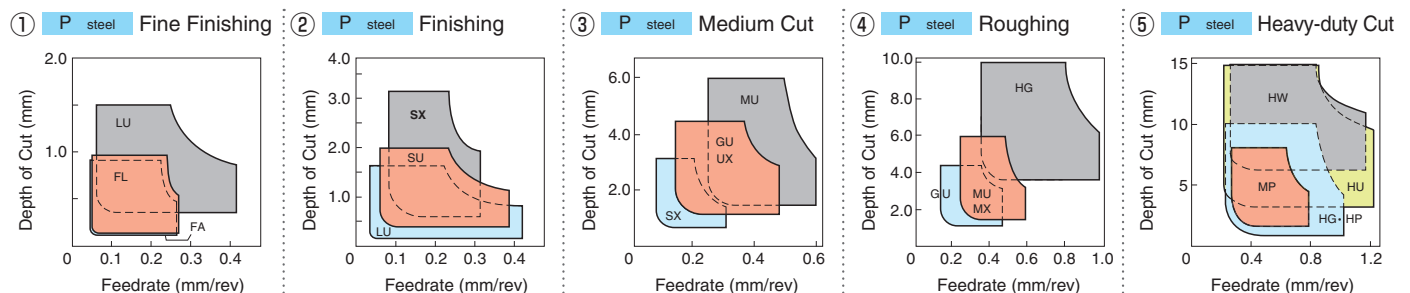
DN 1504

- l : 15.5
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.16

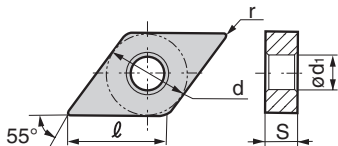
Page for Applicable Holder | External Holders **C11** **C12** Boring Bars **D43** **D44**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic																									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C														
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○													
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○													
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○													
Shape	<table border="1"> <thead> <tr> <th>Shape</th> <th>ISO Cat. No.</th> <th>r</th> </tr> </thead> <tbody> <tr> <td rowspan="2">FA Rake Angle 20°</td> <td>DNMG 150404N-FA</td> <td>0.4</td> </tr> <tr> <td>150408N-FA</td> <td>0.8</td> </tr> <tr> <td rowspan="2">FL Rake Angle 10°</td> <td>DNMG 150404N-FL</td> <td>0.4</td> </tr> <tr> <td>150408N-FL</td> <td>0.8</td> </tr> </tbody> </table>																														Shape	ISO Cat. No.	r	FA Rake Angle 20°	DNMG 150404N-FA	0.4	150408N-FA	0.8	FL Rake Angle 10°	DNMG 150404N-FL	0.4	150408N-FL	0.8
Shape	ISO Cat. No.	r																																									
FA Rake Angle 20°	DNMG 150404N-FA	0.4																																									
	150408N-FA	0.8																																									
FL Rake Angle 10°	DNMG 150404N-FL	0.4																																									
	150408N-FL	0.8																																									

Chipbreaker Application Range Map



DN 55° Diamond Type
Negative
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DN 1504

• l : 15.5 • s : 4.76
• φd : 12.7 • φd1 : 5.16

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	AC150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders C11 C12 Boring Bars D43 D44

Shape	ISO Cat. No.	r	Application																															
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	AC150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C			
LU Rake Angle 10°	DNMG 150402N-LU 150404N-LU 150408N-LU 150412N-LU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SP Rake Angle 13°	DNMG 150404N-SP 150408N-SP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SU Rake Angle 13°	DNMG 150402N-SU 150404N-SU 150408N-SU 150412N-SU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SU Rake Angle 13°	DNGG 150402N-SU 150404N-SU 150408N-SU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SX Rake Angle 3°	DNMG 150404N-SX 150408N-SX 150412N-SX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
EX Rake Angle 16°	DNMG 150404N-EX 150408N-EX 150412N-EX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
GU Rake Angle 7°	DNMG 150404N-GU 150408N-GU 150412N-GU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
UX Rake Angle 0°	DNMG 150404N-UX 150408N-UX 150412N-UX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
UG Rake Angle 4°	DNMG 150404N-UG 150408N-UG 150412N-UG 150416N-UG	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Negative Inserts

C

D

R

S

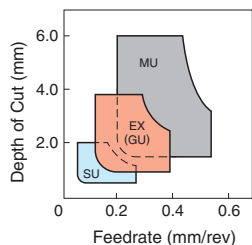
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V

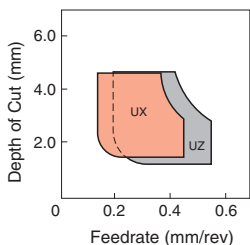
W

Solid CBN
Ceramic

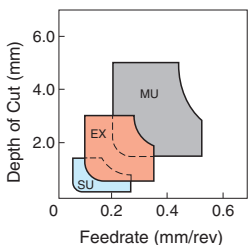
⑥ M stainless steel



⑦ K cast iron



⑧ S exotic alloy

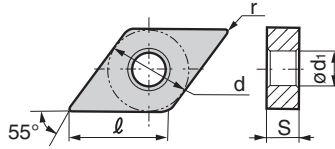


▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN 55° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

DN 1504

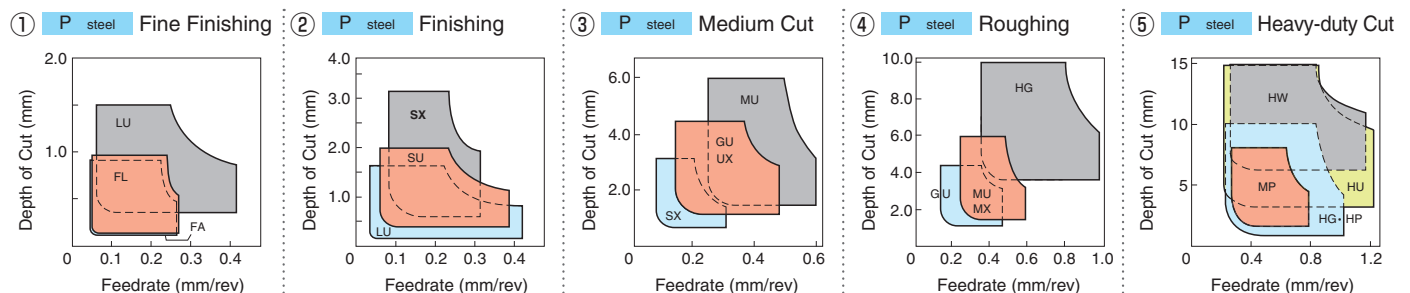
- ℓ : 15.5
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.16

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

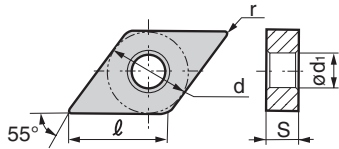
Page for Applicable Holder External Holders **C11** **C12** Boring Bars **D43** **D44**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
UP Rake Angle 10°	DNMG 150404N-UP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150408N-UP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150412N-UP	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150416N-UP	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UM Rake Angle 14°	DNMG 150404R-UM	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150404L-UM	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150408R-UM	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150408L-UM	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UM Rake Angle 14°	DNGG 150404R-UM	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150404L-UM	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150408R-UM	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150408L-UM	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNMA 	150404	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150408	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150412	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DNGA 	150404	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150408	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150412	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MU Rake Angle 4°	DNMG 150408N-MU	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150412N-MU	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150416N-MU	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MX Rake Angle -15°	DNMG 150408N-MX	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150412N-MX	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150416N-MX	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UZ Rake Angle 4°	DNMG 150404N-UZ	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150408N-UZ	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150412N-UZ	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MP Rake Angle 0°	DNMM 150404N-MP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	150408N-MP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150412N-MP	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	150416N-MP	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Chipbreaker Application Range Map



DN 55° Diamond Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DN 1504

• l : 15.5 • s : 4.76
 • φd : 12.7 • φd1 : 5.16

Page for Applicable Holder External Holders C11 C12 Boring Bars D43 D44

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

DN 1504

• l : 15.5 • s : 4.76
 • φd : 12.7 • φd1 : 5.16

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

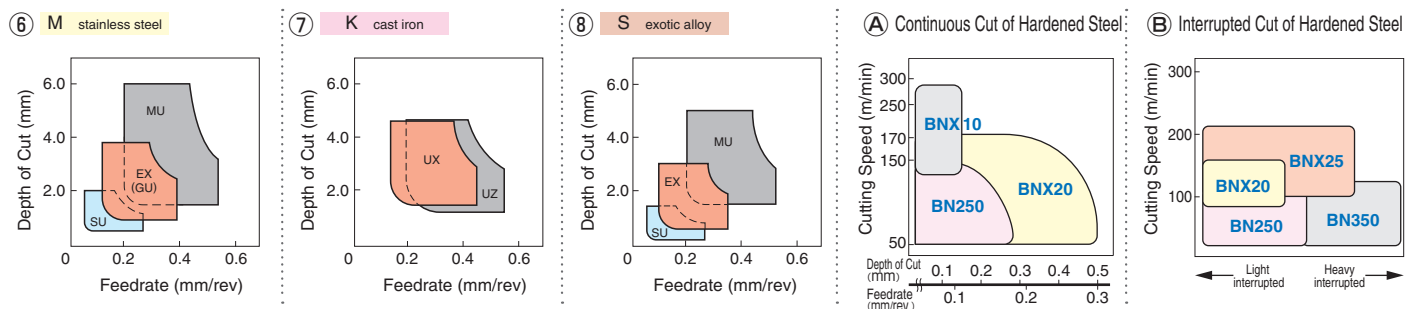
Page for Applicable Holder External Holders C11 C12 Boring Bars D43 D44

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.		10 pieces pack ISO Cat. No.		r	Coated CBN			CBN					PCD					
	1-corn	2-corn	1-corn	2-corn		BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-corn		NU-DNMA 150401	T-NU-DNMA 150401	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150402	150402	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150404	150404	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150408	150408	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412	150412	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2-corn		NS-DNMA 150404	T-NS-DNMA 150404	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150408	150408	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412	150412	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		2NU-DNGA 150404	T- 2NU-DNGA 150404	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150408	150408	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412	150412	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sharp Edge Type		2NS-DNGA 150404	T- 2NS-DNGA 150404	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		150408	150408	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412	150412	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strong Edge Type		2NU-DNGA 150404F	T- 2NU-DNGA 150404F	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		150408F	150408F	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412F	150412F	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Strong Edge Type		2NU-DNGA 150404T	T- 2NU-DNGA 150404T	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		150408T	150408T	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		150412T	150412T	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*Depth-of-cut for one-use type is 0.5mm or less

SUMIBORON Application Range Map

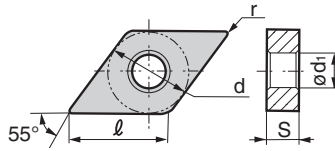


▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN 55° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

Negative Inserts

DN 1504

- l : 15.5
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.16

- ▲ = 1 piece pack Stocked
- ○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C11** **C12**

Boring Bars **D43** **D44**

Condition	Coated CBN			CBN						PCD			
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200	
2-cornered	2NC-DNGA 150404 150408		0.4														
			0.8		●												
4-cornered	4NC-DNGA 150404 150408 150412		0.4	●	●	●	●										
			0.8	●	●	●	●										
			1.2	●	●	●	●										
4-cornered SV Rake Angle -35°	4NC-DNGG 150404N-SV 150408N-SV 150412N-SV		0.4														
			0.8			●											
			1.2			●											

※Depth-of-cut for one-use type is 0.5mm or less

● SUMIBORON

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	DNMA 150404 150408 150412	0.4						●							
		0.8					●								
		1.2					▲								

● SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NF-DNMX 150402 150404 150408 150412	0.2													●
		0.4													●
		0.8													●
		1.2													●

● SUMIDIA (One-use Type)

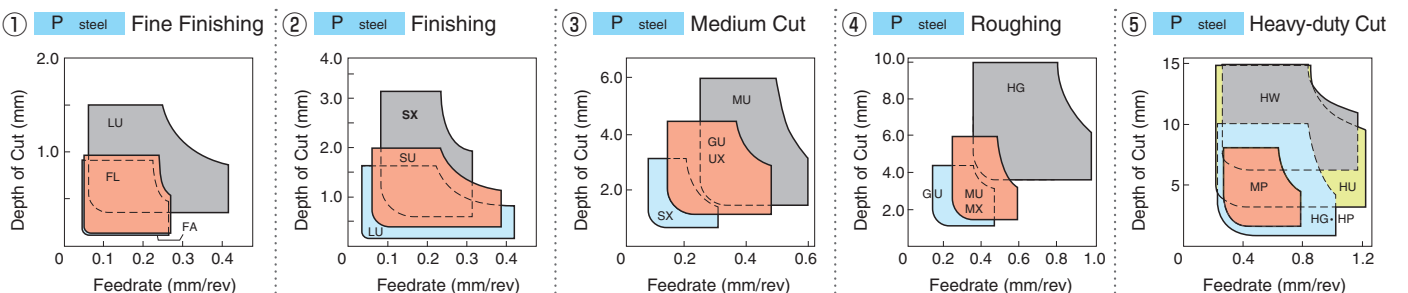
Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NU-DNMX 150402 150404 150408 150412	0.2													○
		0.4													○
		0.8													○
		1.2													○

※Depth-of-cut for one-use type is 0.5mm or less

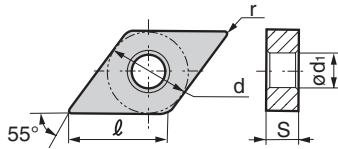
● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	DNMX 150404 150408 150412	0.4													●
		0.8													●
		1.2													●

Chipbreaker Application Range Map



DN 55° Diamond Type
Negative
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

DN 1506

• l : 15.5 • s : 6.35
• phi d : 12.7 • phi d1 : 5.16

Page for Applicable Holder External Holders **C11** **C12**

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide													Coated Cermet	Cermet			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	FA		SP		SU		SX		EX		GU		UX		UG		UP		DNMA											
ISO Cat. No.	DNMG 150604N-FA 150608N-FA		DNMG 150604N-SP 150608N-SP		DNMG 150604N-SU 150608N-SU 150612N-SU		DNMG 150604N-SX 150608N-SX		DNMG 150604N-EX 150608N-EX 150612N-EX		DNMG 150604N-GU 150608N-GU 150612N-GU		DNMG 150604N-UX 150608N-UX 150612N-UX 150616N-UX		DNMG 150604N-UG 150608N-UG 150612N-UG 150616N-UG		DNMG 150604N-UP 150608N-UP 150612N-UP 150616N-UP		DNMA 150608 150612											
r	0.4 0.8		0.4 0.8		0.4 0.8 1.2		0.4 0.8		0.4 0.8 1.2		0.4 0.8 1.2		0.4 0.8 1.2 1.6		0.4 0.8 1.2 1.6		0.4 0.8 1.2 1.6		0.8 1.2											

Negative Inserts

C

D

R

S

T

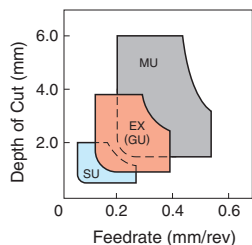
V

W

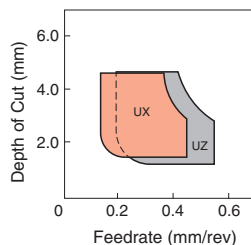
Solid CBN
Ceramic

SUMIBORON Application Range Map

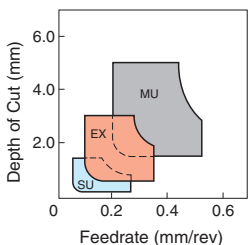
⑥ M stainless steel



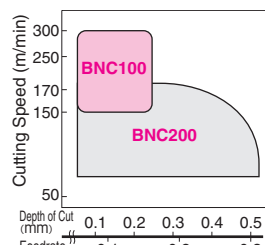
⑦ K cast iron



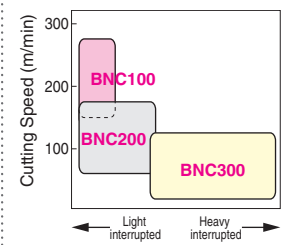
⑧ S exotic alloy



① Continuous Cut of Hardened Steel



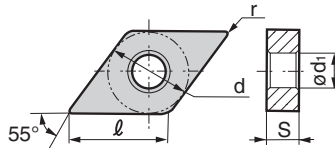
② Interrupted Cut of Hardened Steel



55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN 55° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DN 1506

- l : 15.5
- s : 6.35
- ϕd : 12.7
- $\phi d1$: 5.16

Page for Applicable Holder External Holders **C11** **C12**

Condition	Coated Carbide												Coated Cermet	Cermet			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
MU Rake Angle 4°	DNMG 150608N-MU 150612N-MU 150616N-MU	0.8 1.2 1.6
MX Rake Angle -15°	DNMG 150608N-MX 150612N-MX 150616N-MX	0.8 1.2 1.6
UZ Rake Angle 4°	DNMG 150608N-UZ 150612N-UZ	0.8 1.2
MP Rake Angle 0°	DNMM 150604N-MP 150608N-MP 150612N-MP 150616N-MP	0.4 0.8 1.2 1.6
HP Rake Angle 0°	DNMM 150604N-HP 150608N-HP 150612N-HP 150616N-HP	0.4 0.8 1.2 1.6

DN 1506

- l : 15.5
- s : 6.35
- ϕd : 12.7
- $\phi d1$: 5.16

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **C11** **C12**

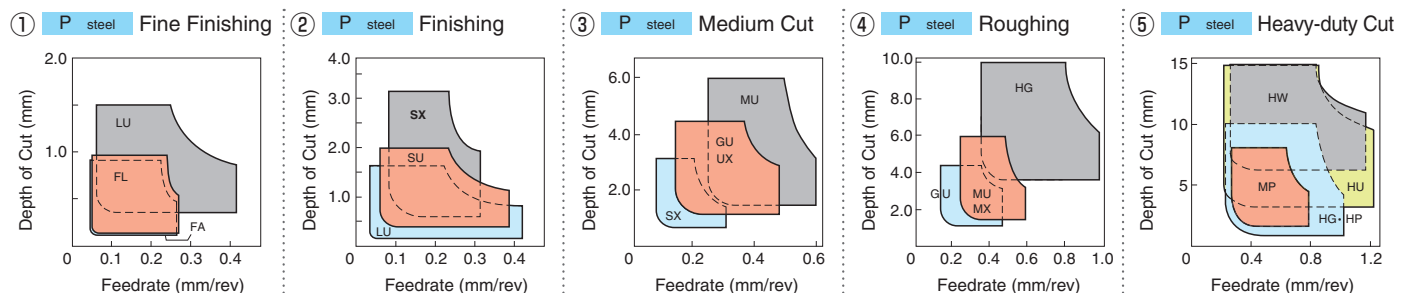
Condition	Coated CBN				CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

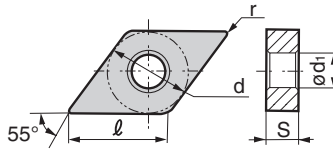
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	NU-DNMA 150604 150608 150612	T-NU-DNMA 150604 150608 150612	0.4 0.8 1.2

*Depth-of-cut for one-use type is 0.5mm or less

Chipbreaker Application Range Map



DN 55° Diamond Type
Negative
With Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

DN 1906

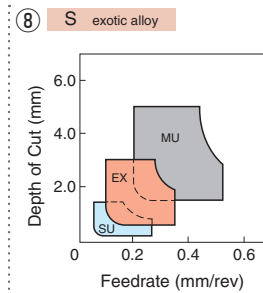
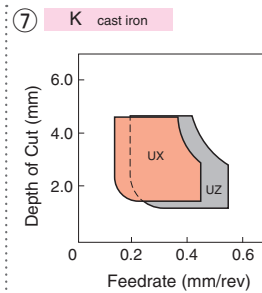
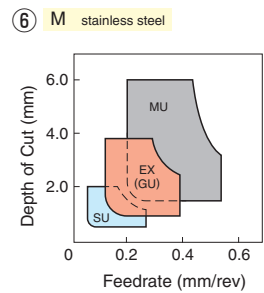
• l : 19.4 • s : 6.35
• φ d : 15.875 • φ d1 : 6.35

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

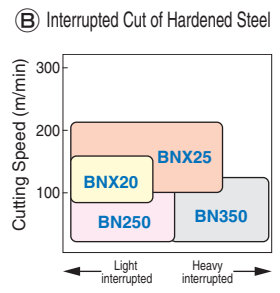
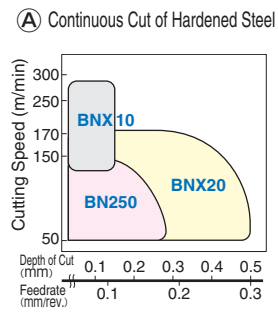
Condition	Coated Carbide												Coated Cermet	Cermets			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
UG Medium cut Rake Angle 4°	DNMG 190608N-UG 190612N-UG 190616N-UG	0.8 1.2 1.6
UZ Medium-Rough cut Rake Angle 4° App. Map ⑦	DNMG 190608N-UZ 190612N-UZ 190616N-UZ	0.8 1.2 1.6
MP Heavy cut Rake Angle 0° App. Map ⑥	DNMM 190608N-MP	0.8

Negative Inserts
C
D
R
S
T
V
W
Solid CBN
Ceramic



SUMIBORON Application Range Map

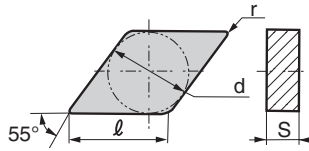


55° DIAMOND TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

DN 55° Diamond Type
Negative
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

Negative Inserts

DN 1103

• l : 11.6 • s : 3.18
• ϕd : 9.525

●▲ = 1 piece pack Stacked
●○ = 1 piece pack and 10 pieces pack both Stacked

Page for Applicable Holder

External Holders **L47**

Condition	Coated CBN			CBN			PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● **SUMIBORON**

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application														
				BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200		
Solid	DNGN 110308 110312		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sharp Edge Type	DNGN 110308F 110312F		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

D

R

S

T

V

W

Solid CBN Ceramic

DN 1504

• l : 15.5 • s : 4.76
• ϕd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic															
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r	Application																																
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C				
Medium cut	DNGN 150408 150412 150416	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

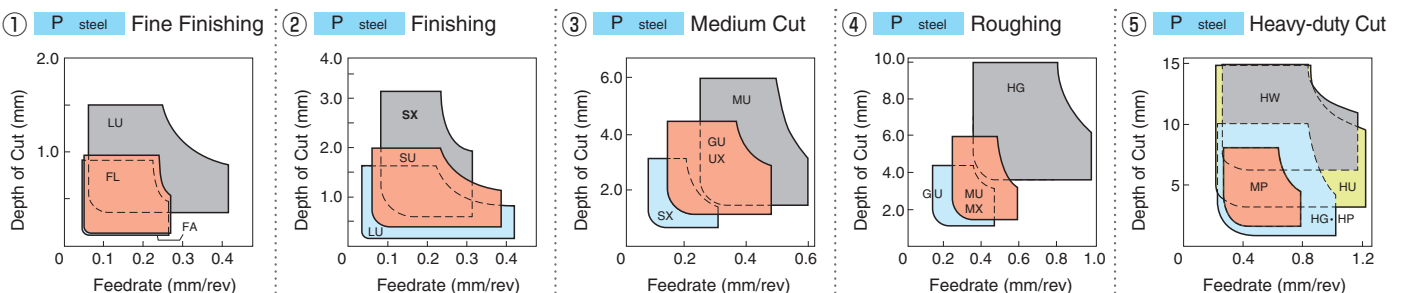
DN 1507

• l : 15.5 • s : 7.94
• ϕd : 12.7

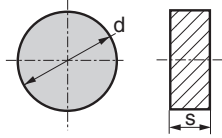
Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic																
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C			
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r	Application																																
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C				
Medium cut	DNGN 150712	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Chipbreaker Application Range Map



RN Round Type Negative Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

RN [Color swatches]

- s : 4.76~7.94
- φd : 12.70~15.875

Shape	ISO Cat. No.	d	S
	RNGN 120400	12.70	4.76
	120700	12.70	7.94
	150700	15.875	7.94

		Coated Carbide										Coated Cermet	Cermet			Carbide			Ceramic										
Condition	Application	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	P steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	M stainless steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	K cast iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

RN [Color swatches]

- s : 3.18~4.76
- φd : 9.525~12.70

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

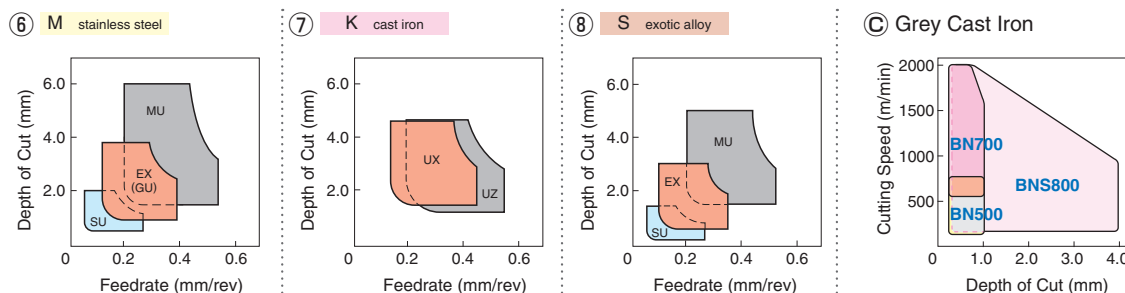
External Holders **L47**

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat.	d	S
	RNGN 090300		9.525	3.18
	120300		12.70	3.18
	120400		12.70	4.76
	RNGN 090300F		9.525	3.18
	120300F		12.70	3.18

		Coated CBN			CBN						PCD		
Condition	Application	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BNX700	BNX800	DA150	DA200
Continuous Cut	P steel	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	M stainless steel	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	K cast iron	●	●	●	●	●	●	●	●	●	●	●	●

- Negative Inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

SUMIBORON Application Range Map

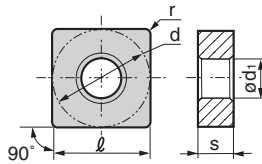


SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN S702

- ℓ : 7.14
- s : 2.38
- ϕd : 7.14
- $\phi d1$: 2.97

Condition	Coated Carbide													Coated Cermet	Cermet			Carbide		Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
GX Light cut Rake Angle 15° (Left-hand insert shown)	SNGG S70204R-GX S70204L-GX S70208R-GX S70208L-GX	0.4 0.4 0.8 0.8
C For Chamfering Rake Angle 0°	SNGG S70200-C	0

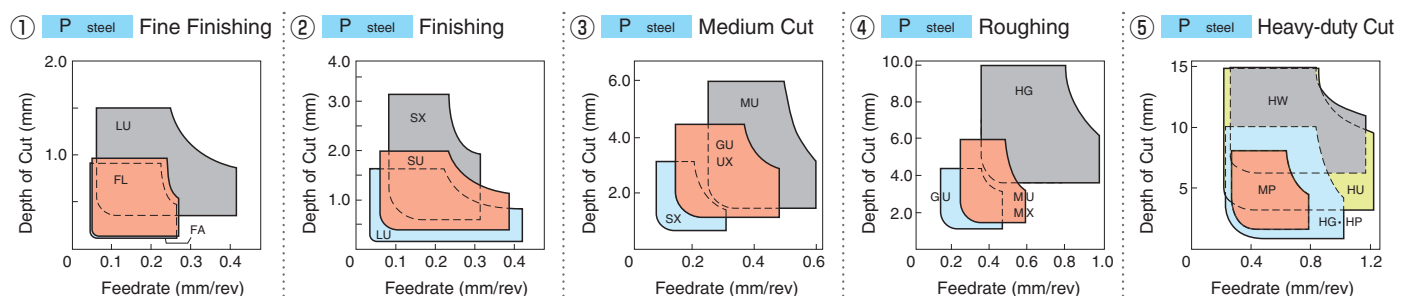
SN 07T2

- ℓ : 7.94
- s : 2.78
- ϕd : 7.94
- $\phi d1$: 3.15

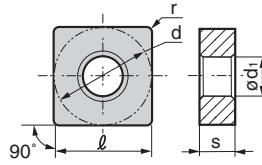
Condition	Coated Carbide													Coated Cermet	Cermet			Carbide		Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
GX Light cut Rake Angle 15° (Left-hand insert shown)	SNGG 07T204R-GX 07T204L-GX 07T208R-GX 07T208L-GX	0.4 0.4 0.8 0.8
C For Chamfering Rake Angle 0°	SNGG 07T200-C	0

Chipbreaker Application Range Map



SN Square Type Negative With Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 1204

• l : 12.7 • s : 4.76
• phi d : 12.7 • phi d1 : 5.16

Page for Applicable Holder External Holders C13 ~ C16 Boring Bars D45 D46

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Shape	UG		UP		UM		UM		UM		UM		UM		UM		UM		UM		UM		UM		UM		UM		UM		
ISO Cat. No.	SNMG 120408N-UG 120412N-UG 120416N-UG		SNMG 120404N-UP 120408N-UP 120412N-UP		SNMG 120404R-UM 120404L-UM 120408R-UM 120408L-UM 120412R-UM 120412L-UM		SNGG 120404R-UM 120404L-UM 120408R-UM 120408L-UM 120412R-UM 120412L-UM 120416R-UM 120416L-UM		SNMA 120404 120408 120412 120416 120420		SNGA 120404 120408 120412																				
r	0.8	1.2	1.6	0.4	0.8	1.2	0.4	0.4	0.8	0.8	1.2	1.2	1.6	1.6	0.4	0.8	1.2	1.6	2.0	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2

Medium cut

Negative Inserts

C

D

R

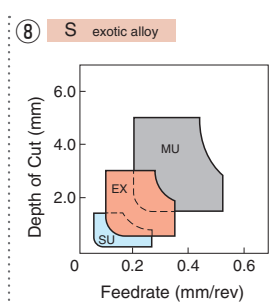
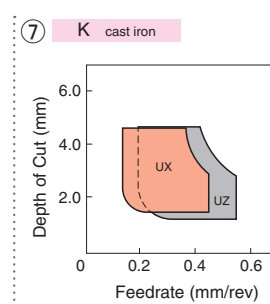
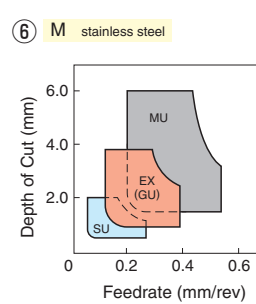
S

T

V

W

Solid CBN
Ceramic



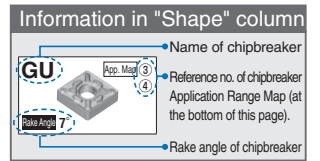
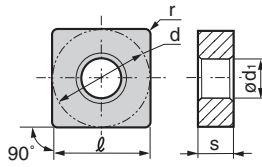
▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
With Insert Hole



Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 1204

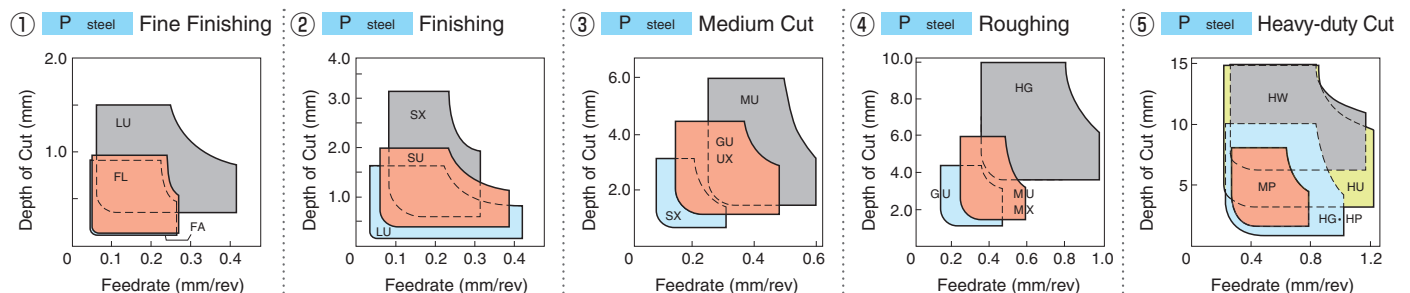
- ϕ : 12.7
- ϕ s : 4.76
- ϕ d : 12.7
- ϕ d1 : 5.16

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

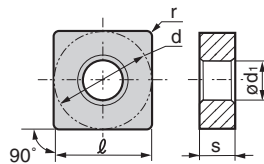
Page for Applicable Holder External Holders **C13** ~ **C16** Boring Bars **D45** **D46**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C					
MU Rake Angle 4°	SNMG 120408N-MU	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	120412N-MU	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	120416N-MU	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
MX Rake Angle -15°	SNMG 120408N-MX	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	120412N-MX	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	120416N-MX	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
UZ Rake Angle 4°	SNMG 120408N-UZ	0.8	●	●	●	▲	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	120412N-UZ	1.2	●	●	●	▲	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	120416N-UZ	1.6	●	●	●	▲	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
MM Rake Angle 10°	SNGG 120408R-MM	0.8	—	—	—	—	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	120408L-MM	0.8	—	—	—	—	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
MP Rake Angle 0°	SNMM 120408N-MP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	120412N-MP	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	120416N-MP	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	120420N-MP	2.0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
HG Rake Angle 0°	SNMM 120408N-HG	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	120412N-HG	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	120416N-HG	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
HP Rake Angle 0°	SNMM 120408N-HP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	120412N-HP	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	120416N-HP	1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C Rake Angle 0°	SNGG 120400-C	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	

Chipbreaker Application Range Map



SN Square Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SN 1204

- l : 12.7
- s : 4.76
- phi d : 12.7
- phi d1 : 5.16

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C13** ~ **C16**

Boring Bars **D45** **D46**

Condition	Coated CBN			CBN				PCD				
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●

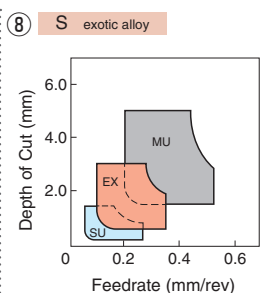
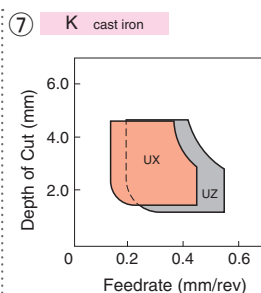
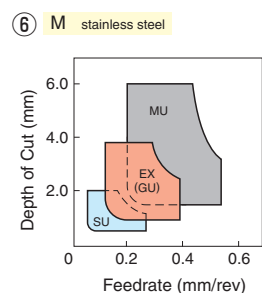
● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application														
				BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN700	BNS800	DA150	DA2200			
1-cornered	 NU-SNMA 120404 120408 120412	T-NU-SNMA 120404 120408 120412	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.8	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—
			1.2	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—
2-cornered	 2NU-SNGA 120404 120408 120412	T-2NU-SNGA 120404 120408 120412	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.8	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—
			1.2	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—

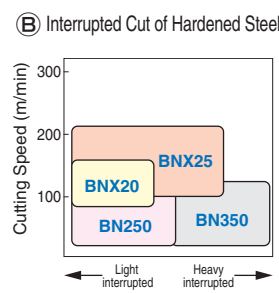
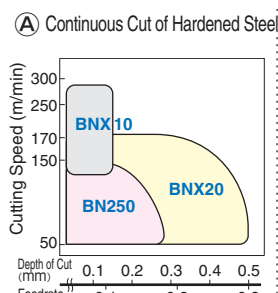
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIBORON

Shape	ISO Cat. No.	r	Application														
			BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN700	BNS800	DA150	DA2200			
1-cornered	 SNMA 120404 120408 120412	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—
		1.2	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—
Solid	 SNGA 120408 120412	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



SUMIBORON Application Range Map

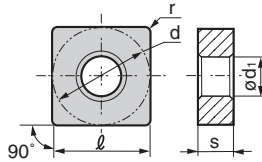


SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 1506

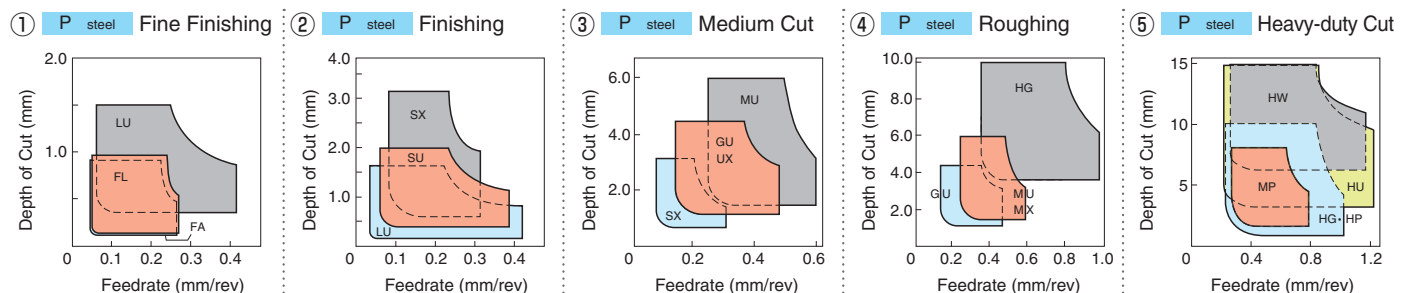
- ϕ : 15.875
- s : 6.35
- ϕd : 15.875
- $\phi d1$: 6.35

Page for Applicable Holder External Holders **C13** **C14**

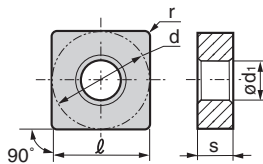
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
GU Rake Angle 7°	SNMG 150612N-GU	1.2
UG Rake Angle 4°	SNMG 150612N-UG	1.2
MU Rake Angle 4°	SNMG 150612N-MU 150616N-MU	1.2 1.6
MX Rake Angle -15°	SNMG 150612N-MX 150616N-MX	1.2 1.6
UZ Rake Angle 4°	SNMG 150612N-UZ 150616N-UZ	1.2 1.6
MP Rake Angle 0°	SNMM 150612N-MP 150616N-MP	1.2 1.6

Chipbreaker Application Range Map



SN Square Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SN 1906

- ℓ : 19.05
- s : 6.35
- ϕd : 19.05
- $\phi d1$: 7.94

Page for Applicable Holder External Holders C13 C14 Boring Bars D45 D46

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	○	●	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	○	●	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	○	●	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

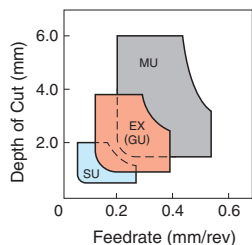
Shape	ISO Cat. No.	r
UX Rake Angle 0°	SNMG 190612N-UX 190616N-UX	1.2 1.6
UG Rake Angle 4°	SNMG 190612N-UG 190616N-UG	1.2 1.6
SNMA 190612 190616		1.2 1.6
MU Rake Angle 4°	SNMG 190612N-MU 190616N-MU	1.2 1.6
MX Rake Angle -15°	SNMG 190612N-MX 190616N-MX	1.2 1.6
UZ Rake Angle 4°	SNMG 190608N-UZ 190612N-UZ 190616N-UZ	0.8 1.2 1.6
MP Rake Angle 0°	SNMM 190612N-MP 190616N-MP	1.2 1.6
HG Rake Angle 0°	SNMM 190612N-HG 190616N-HG 190624N-HG	1.2 1.6 2.4
HP Rake Angle 0°	SNMM 190612N-HP 190616N-HP	1.2 1.6

Negative Inserts

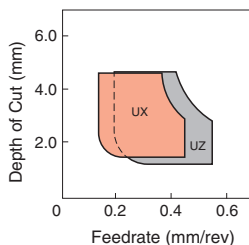


Solid CBN
Ceramic

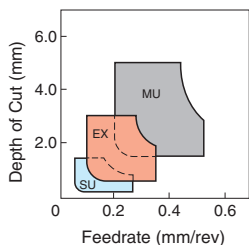
⑥ M stainless steel



⑦ K cast iron



⑧ S exotic alloy

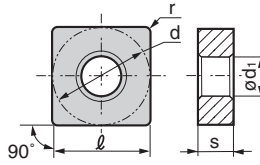


SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
With Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- App. Map ③: Reference no. of chipbreaker
- Application Range Map (at the bottom of this page): Application Range Map (at the bottom of this page).
- 7: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 2507

- ϕ : 25.4
- ϕ s : 7.94
- ϕ d : 25.4
- ϕ d1 : 9.2

Page for Applicable Holder External Holders **C14**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic																	
	AC700G	AC2000	AC3000	AC900G	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C						
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○					
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○					
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○					
Shape	UG	SNMG 250724N-UG																ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C									
Medium cut	UG Rake Angle 4°																																		
Heavy cut	MP Rake Angle 0°	SNMM 250724N-MP																																	
Heavy cut	HP Rake Angle 0°	SNMM 250724N-HP																																	
Heavy cut	HU Rake Angle -15°	SNMM 250724N-HU <i>cNew</i>																																	
Heavy cut	HW Rake Angle -15°	SNMM 250724N-HW <i>cNew</i>																																	

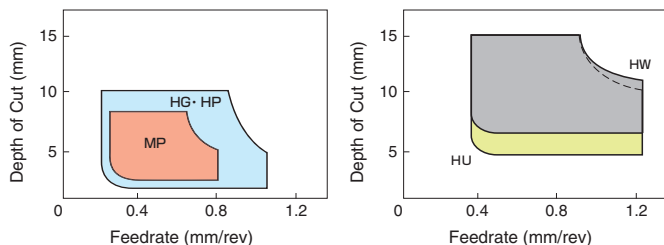
SN 2509

- ϕ : 25.4
- ϕ s : 9.52
- ϕ d : 25.4
- ϕ d1 : 9.2

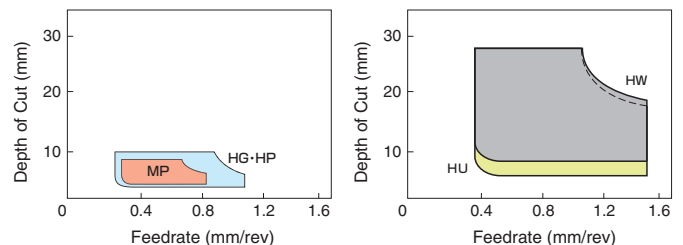
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC900G	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	UG		▲																		ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Medium-Rough cut	UG Rake Angle 4°																													
Medium-Rough cut	UZ Rake Angle 4°																													

Chipbreaker Application Range Map

① P steel M stainless steel Heavy-duty Cut (SN□□25 type)

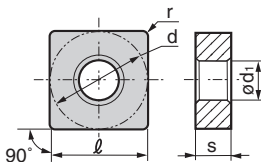


② P steel M stainless steel Heavy-duty Cut (SN□□31 type)



▲ mark : To be replaced by new item (Please confirm stock availability)

SN Square Type
Negative
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

SN 2509

• l : 25.4 • s : 9.52
• phi d : 25.4 • phi d1 : 9.2

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide												Coated Cermet	Cermet			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC900G	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
MP Rake Angle 0°	SNMM 250924N-MP	2.4
HP Rake Angle 0°	SNMM 250924N-HP	2.4
HU Rake Angle -15°	SNMM 250924N-HU <i>New</i>	2.4
HW Rake Angle -15°	SNMM 250924N-HW <i>New</i>	2.4

SN 3109

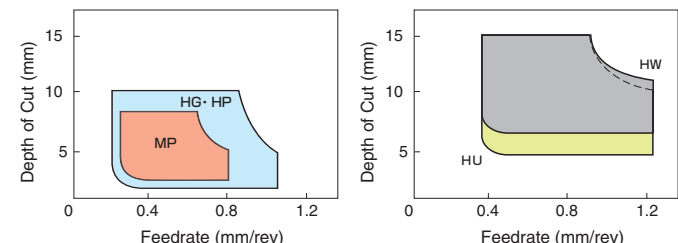
• l : 31.75 • s : 9.52
• phi d : 31.75 • phi d1 : 8.8

Condition	Coated Carbide												Coated Cermet	Cermet			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC900G	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

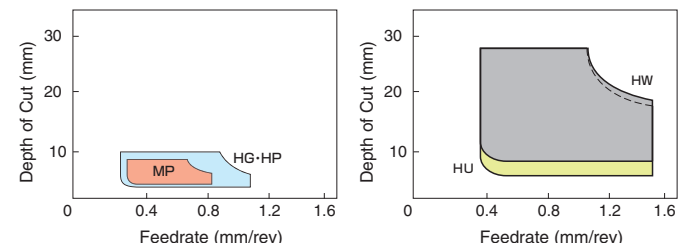
Shape	ISO Cat. No.	r
MP Rake Angle 0°	SNMM 310924N-MP	2.4
HP Rake Angle 0°	SNMM 310924N-HP <i>New</i>	2.4
HU Rake Angle -15°	SNMM 310924N-HU <i>New</i>	2.4
HW Rake Angle -15°	SNMM 310924N-HW <i>New</i>	2.4

Chipbreaker Application Range Map

① P steel M stainless steel Heavy-duty Cut (SN□□25 type)



② P steel M stainless steel Heavy-duty Cut (SN□□31 type)



Negative Inserts

C

D

R

S

T

V

W

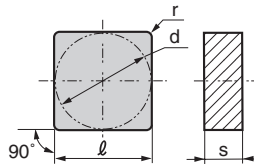
Solid CBN
Ceramic

SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
Without Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 0903

- l : 9.525
- s : 3.18
- ϕd : 9.525

Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **L46**

Shape	ISO Cat. No.	r
Medium cut	SNGN 090304 090308 090312	0.4 0.8 1.2

SN 0903

- l : 9.525
- s : 3.18
- ϕd : 9.525

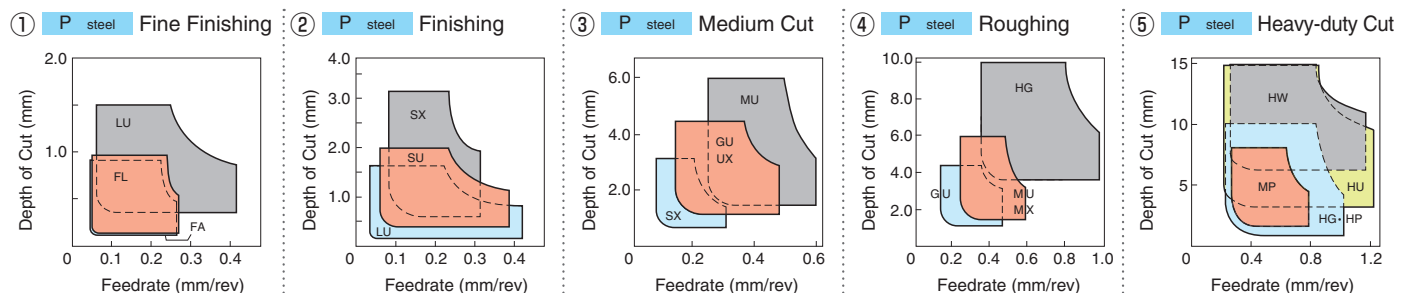
●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **L46**

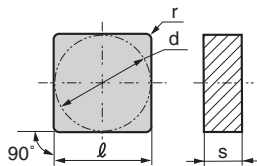
Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
4-cornered	SNGN 090308-B 090312-B 090316-B		0.8 1.2 1.6
	SNGN 090308 090312		0.8 1.2
	SNGN 090308F 090312F		0.8 1.2
Solid	SNGN 090308F 090312F		0.8 1.2
	SNGN 090308F 090312F <small>Sharp Edge Type</small>		0.8 1.2
	SNEN 090308W <small>Wiper Insert</small>		0.8
SNEN 090308FW <small>Wiper sharp edge type</small>		0.8	

Chipbreaker Application Range Map



SN Square Type Negative Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SN 1203

- l : 12.7
- s : 3.18
- φd : 12.7

Page for Applicable Holder External Holders **L46**

Condition	Coated Carbide														Coated Cermet	Cermet			Carbide		Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SN 1203

- l : 12.7
- s : 3.18
- φd : 12.7

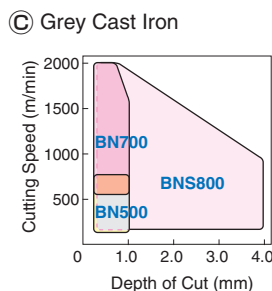
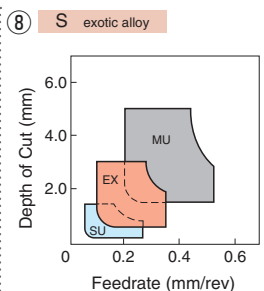
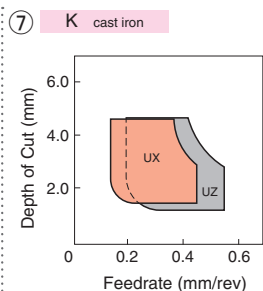
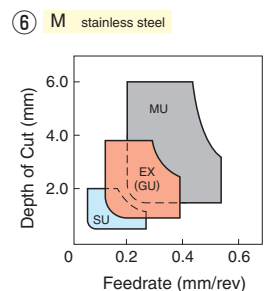
- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **L46**

SUMIBORON

Shape	ISO Cat. No.		r	Coated CBN			CBN					PCD					
	1 piece pack	10 pieces pack		BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX250	BNX350	BN500	BN700	BN800	DA150	DA200
Medium cut	SNGN 120304 120308 120312	0.4 0.8 1.2	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Solid	SNGN 120308F 120312F	0.8 1.2	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SUMIBORON Application Range Map



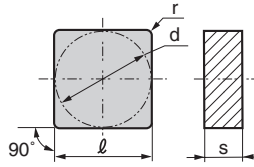
▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

SN Square Type
Negative
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 1204

- ℓ : 12.7
- s : 4.76
- ϕd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	T250A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **L46**

Shape	ISO Cat. No.	r
	SNMN 120404	0.4
	120408	0.8
	120412	1.2
	120416	1.6
	120420	2.0
	120424	2.4
	SNGN 120404	0.4
	120408	0.8
	120412	1.2
	120416	1.6

SN 1204

- ℓ : 12.7
- s : 4.76
- ϕd : 12.7

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

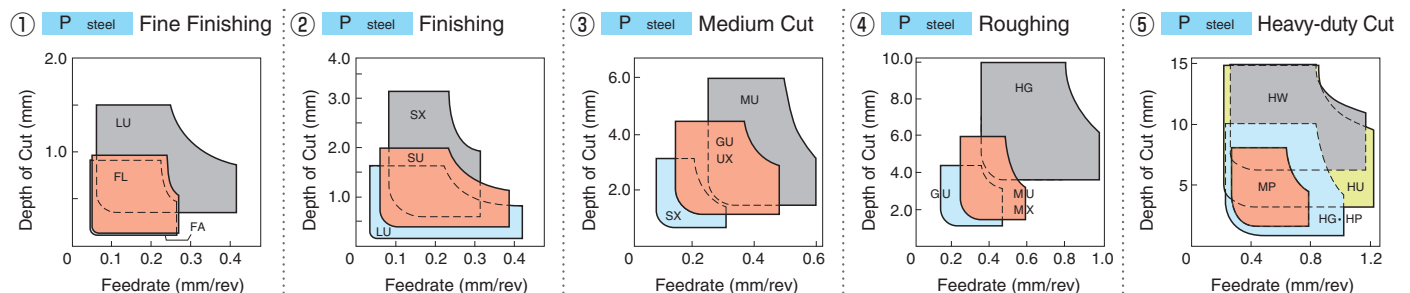
Page for Applicable Holder External Holders **L46**

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

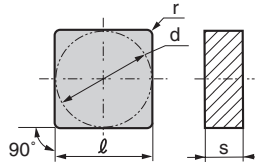
SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	SNGN 120408		0.8
	120412		1.2
	SNGN 120408-B		0.8
	120412-B		1.2
	120416-B		1.6
	120416-B		1.6
	SNGN 120408		0.8
	120412		1.2
	120416		1.6
	120416		1.6
	120420		2.0

Chipbreaker Application Range Map



SN Square Type Negative Without Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SN 1207

• l : 12.7 • s : 7.94
• φd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
Medium cut	SNGN 120708 120712 120716 120720	0.8
		1.2
		1.6
		2.0
		2.0

SN 1504

• l : 15.875 • s : 4.76
• φd : 15.875

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
Medium cut	SNMN 150408 150412	0.8
		1.2
Medium cut	SNGN 150408 150412 150416	0.8
		1.2
		1.2
		1.6

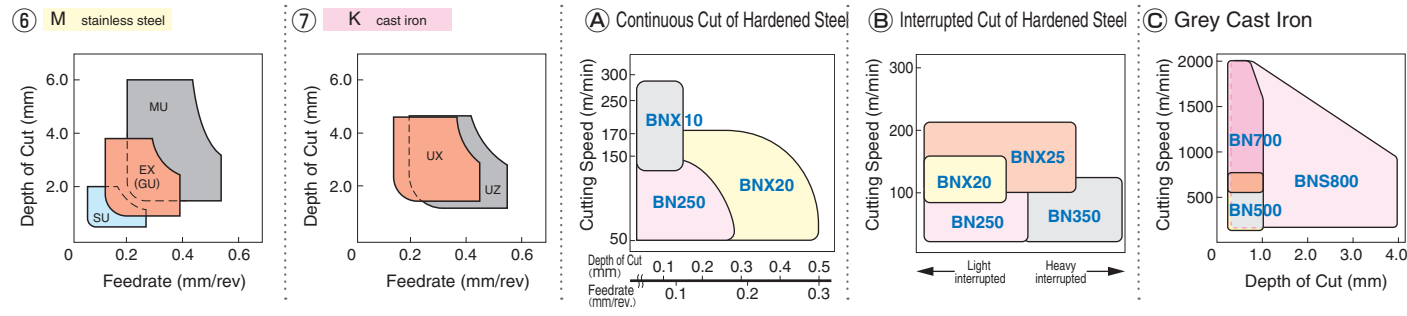
SN 1904

• l : 19.05 • s : 4.76
• φd : 19.05

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
Medium cut	SNMN 190412	1.2
		1.2
Medium cut	SNGN 190402 190404 190408 190412 190416	0.2
		0.4
		0.8
		1.2
		1.2
		1.6

SUMIBORON Application Range Map

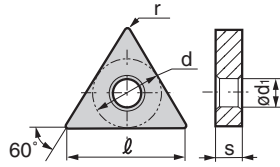


TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 0902

- ℓ : 9.6
- s : 2.38
- ϕd : 5.56
- $\phi d1$: 2.57

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
GX Light cut Rake Angle 15° (Left-hand insert shown)	TNGG 090204R-GX 090204L-GX 090208R-GX 090208L-GX	0.4 0.4 0.8 0.8

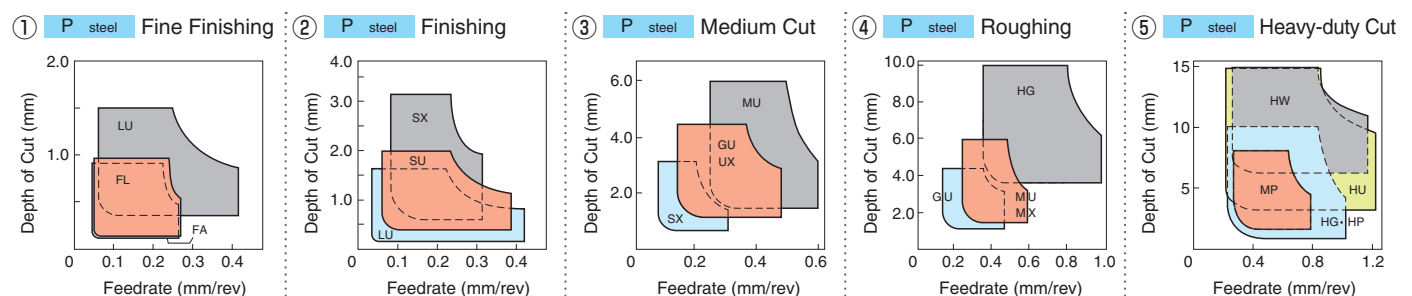
TN 11T2

- ℓ : 11.0
- s : 2.78
- ϕd : 6.35
- $\phi d1$: 2.76

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
GX Light cut Rake Angle 15° (Left-hand insert shown)	TNGG 11T04R-GX 11T04L-GX 11T08R-GX 11T08L-GX	0.4 0.4 0.8 0.8
V Medium cut	TNGA 11T204	0.4

Chipbreaker Application Range Map

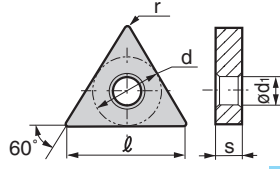


TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 1603

- l : 16.5
- s : 3.18
- ϕd : 9.525
- $\phi d1$: 3.81

Page for Applicable Holder External Holders C19 ~ C21

Condition	Coated Carbide											Coated Cermet	Cermets			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	ST																	SX		TNMA		TNGA								
ISO Cat. No.	TNGG 160302R-ST, 160302L-ST, 160304R-ST, 160304L-ST, 160308R-ST, 160308L-ST																	TNMG 160304N-SX, 160308N-SX		160304, 160308, 160312		160302, 160304, 160308, 160312								
r	0.2, 0.4, 0.8																	0.4, 0.8		0.4, 0.8, 1.2		0.2, 0.4, 0.8, 1.2								

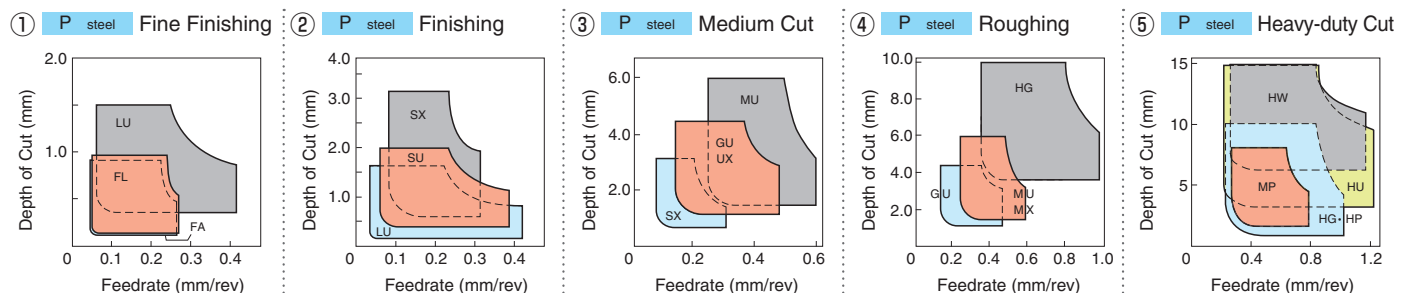
TN 1604

- l : 16.5
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 3.81

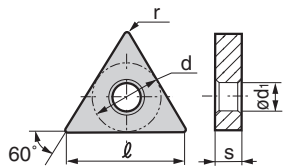
Page for Applicable Holder External Holders C17 ~ C21 C49 C51 Spring Bars D47

Condition	Coated Carbide											Coated Cermet	Cermets			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	FA																	FL		LU										
ISO Cat. No.	TNMG 160402N-FA, 160404N-FA, 160408N-FA																	TNMG 160404N-FL, 160408N-FL		TNMG 160402N-LU, 160404N-LU, 160408N-LU, 160412N-LU										
r	0.2, 0.4, 0.8																	0.4, 0.8		0.2, 0.4, 0.8, 1.2										

Chipbreaker Application Range Map



TN Triangular Type Negative With Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

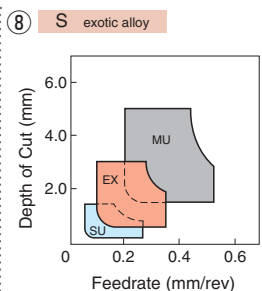
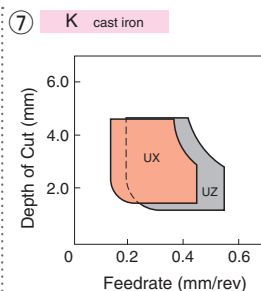
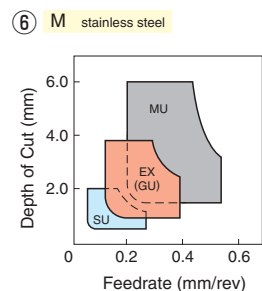
TN 1604

• l : 16.5 • s : 4.76
• φd : 9.525 • φd1 : 3.81

Page for Applicable Holder External Holders C17 ~ C21 C49 C51 Boring Bars D47

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T200Z	T300Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	SP		SU		SU		FY		FX		ST		GX																	
ISO Cat. No.	TNMG 160404N-SP 160408N-SP		TNMG 160402N-SU 160404N-SU 160408N-SU 160412N-SU		TNGG 160402N-SU 160404N-SU 160408N-SU		TNGG 160402R-FY 160402L-FY 160404R-FY 160404L-FY		TNGG 160402R-FX 160402L-FX 160404R-FX 160404L-FX		TNGG 160404R-ST 160404L-ST 160408R-ST 160408L-ST 160412R-ST 160412L-ST 160416R-ST 160416L-ST		TNGG 160404R-GX 160404L-GX 160408R-GX 160408L-GX 160412R-GX 160412L-GX																	
r	0.4 0.8		0.2 0.4 0.8 1.2		0.2 0.4 0.8		0.2 0.2 0.4 0.4		0.2 0.2 0.4 0.4		0.4 0.4 0.8 0.8 1.2 1.2 1.6 1.6		0.4 0.4 0.8 0.8 1.2 1.2																	

Finishing	Shape	ISO Cat. No.	r
Finishing	SP	TNMG 160404N-SP 160408N-SP	0.4 0.8
	SU	TNMG 160402N-SU 160404N-SU 160408N-SU 160412N-SU	0.2 0.4 0.8 1.2
	SU	TNGG 160402N-SU 160404N-SU 160408N-SU	0.2 0.4 0.8
	FY	TNGG 160402R-FY 160402L-FY 160404R-FY 160404L-FY	0.2 0.2 0.4 0.4
	FX	TNGG 160402R-FX 160402L-FX 160404R-FX 160404L-FX	0.2 0.2 0.4 0.4
Light cut	ST	TNGG 160404R-ST 160404L-ST 160408R-ST 160408L-ST 160412R-ST 160412L-ST 160416R-ST 160416L-ST	0.4 0.4 0.8 0.8 1.2 1.2 1.6 1.6
	GX	TNGG 160404R-GX 160404L-GX 160408R-GX 160408L-GX 160412R-GX 160412L-GX	0.4 0.4 0.8 0.8 1.2 1.2

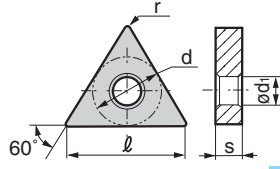


TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

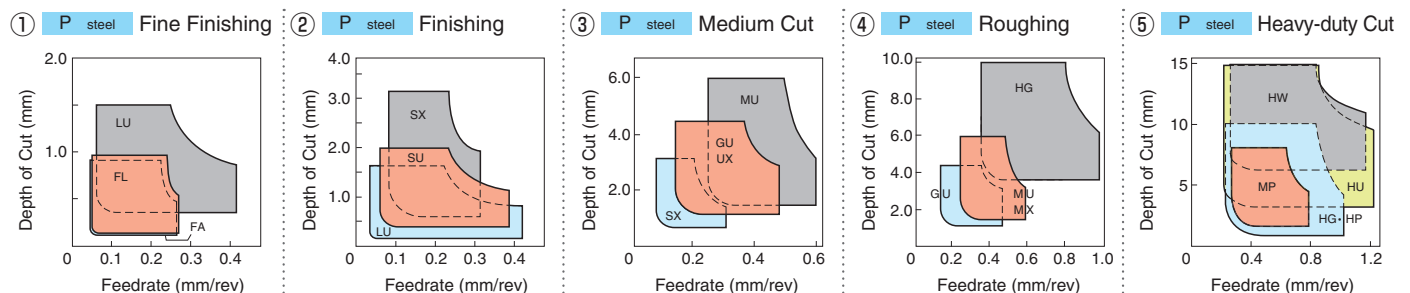
TN 1604

- ϕl : 16.5
- ϕs : 4.76
- $\phi \phi d$: 9.525
- $\phi \phi d1$: 3.81

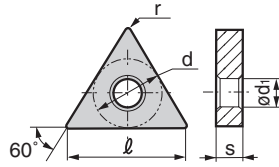
Page for Applicable Holder External Holders C17 ~ C21 C49 C51 Boring Bars D47

Condition	Coated Carbide												Coated Cermet	Cermets		Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	SX		EX		GU		UX		UG		UP		UM		UM		UM		UM		UM		UM		UM		UM		UM	
ISO Cat. No.	TNMG 160404N-SX 160408N-SX		TNMG 160404N-EX 160408N-EX 160412N-EX		TNMG 160404N-GU 160408N-GU 160412N-GU 160416N-GU		TNMG 160404N-UX 160408N-UX 160412N-UX		TNMG 160404N-UG 160408N-UG 160412N-UG 160416N-UG		TNMG 160404N-UP 160408N-UP 160412N-UP		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM		TNMG 160404R-UM 160404L-UM 160408R-UM 160408L-UM	
r	0.4 0.8		0.4 0.8 1.2		0.4 0.8 1.2 1.6		0.4 0.8 1.2		0.4 0.8 1.2 1.6		0.4 0.8 1.2		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8		0.4 0.4 0.8 0.8			
Shape	SX		EX		GU		UX		UG		UP		UM		UM		UM		UM		UM		UM		UM		UM		UM	
ISO Cat. No.	TNMG 160402R-UM 160402L-UM 160404R-UM 160404L-UM 160408R-UM 160408L-UM 160412R-UM 160412L-UM 160416R-UM 160416L-UM																													
r	0.2 0.2 0.4 0.4 0.8 0.8 1.2 1.2 1.6 1.6																													

Chipbreaker Application Range Map



TN Triangular Type Negative With Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 1604

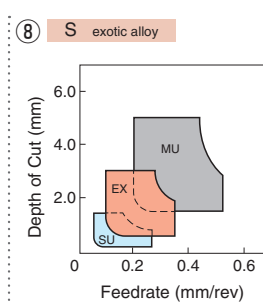
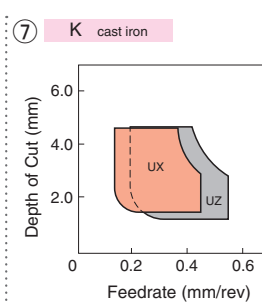
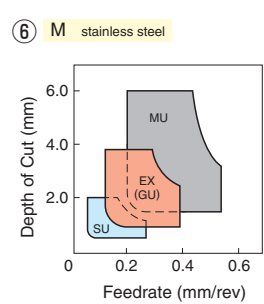
• l : 16.5 • s : 4.76
 • ϕd : 9.525 • $\phi d1$: 3.81

Page for Applicable Holder External Holders C17 ~ C21 C49 C51 Boring Bars D47

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic																				
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C									
Continuous Cut	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○								
Medium Cut	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○								
Interrupted Cut	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○								
Shape	TNMA 160404 160408 160412 160416 160420		TNGA 160404 160408 160412 160416		TNMG 160408N-MU 160412N-MU		TNMG 160408N-MX 160412N-MX		TNMG 160404N-UZ 160408N-UZ 160412N-UZ 160416N-UZ 160420N-UZ		TNMG 160404R-HM 160404L-HM 160408R-HM 160408L-HM		TNGG 160404R-MM 160404L-MM 160408R-MM 160408L-MM																									
r	0.4	0.8	1.2	1.6	2.0	0.4	0.8	1.2	1.6	0.8	1.2	0.8	1.2	0.4	0.8	1.2	1.6	2.0	0.4	0.4	0.8	0.8																

Medium cut	Medium-Rough cut
 Rake Angle 4°	 Rake Angle 4° Rake Angle 15° Rake Angle 10°

Negative Inserts
C
D
R
S
T
V
W
Solid CBN
Ceramic



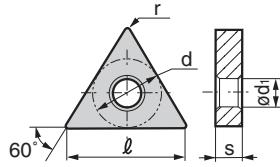
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 1604

- ℓ : 16.5
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 3.81

Condition	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders C17 ~ C21 C49 C51 Boring Bars D47

Shape	ISO Cat. No.	r
MP Rough cut Rake Angle 0°	TNMM 160404N-MP 160408N-MP 160412N-MP 160416N-MP	0.4 0.8 1.2 1.6
HP Heavy cut Rake Angle 0°	TNMM 160408N-HP 160412N-HP	0.8 1.2

Negative Inserts

C

D

R

S

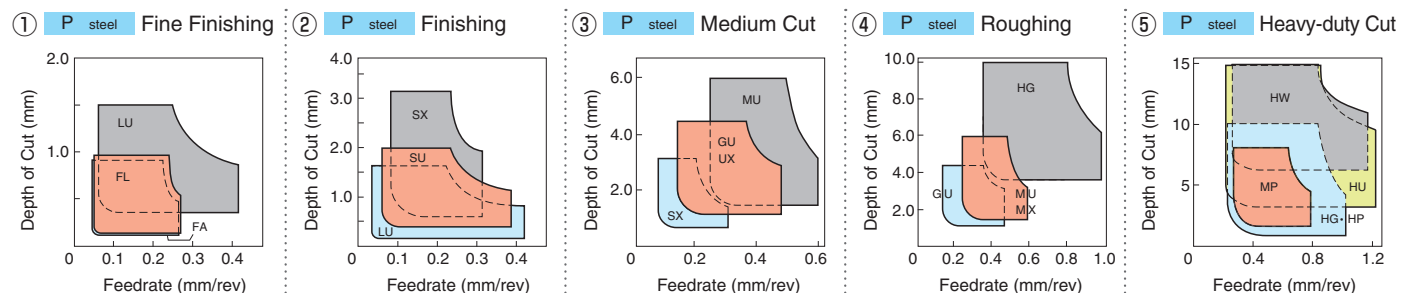
T

V

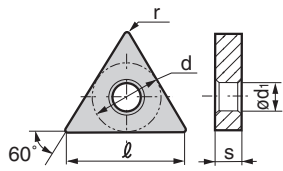
W

Solid CBN Ceramic

Chipbreaker Application Range Map



TN Triangular Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

TN 1604

- l : 16.5
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 3.81

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C17 ~ C21 C49 C51**

Boring Bars **D47**

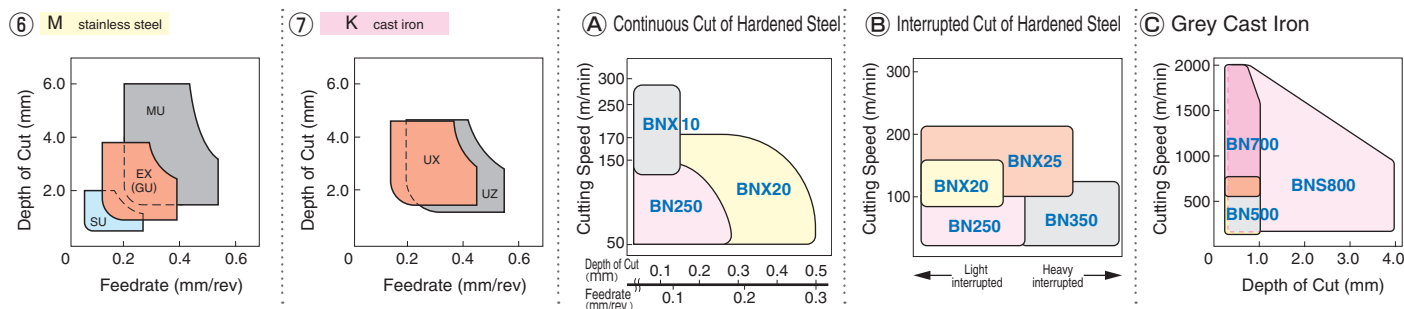
Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.		10 pieces pack ISO Cat. No.		r	Application													
	160401	160402	160401	160402		BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	●▲ NU-TNMA 160401 <i>New</i>		●▲ T-NU-TNMA 160401 <i>New</i>		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160402 <i>New</i>		●▲ 160402 <i>New</i>		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160404 <i>New</i>		●▲ 160404 <i>New</i>		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3-cornered	●▲ 160408 <i>New</i>		●▲ 160408 <i>New</i>		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412 <i>New</i>		●▲ 160412 <i>New</i>		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ NS-TNMA 160404		●▲ T-NS-TNMA 160404		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160408		●▲ 160408		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412		●▲ 160412		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 3NU-TNGA 160404		●▲ T-3NU-TNGA 160404		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3-cornered	●▲ 160408		●▲ 160408		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412		●▲ 160412		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 3NS-TNGA 160404		●▲ T-3NS-TNGA 160404		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160408		●▲ 160408		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412		●▲ 160412		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sharp Edge Type	●▲ 3NU-TNGA 160404F		●▲ T-3NU-TNGA 160404F		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	
Strong Edge Type	●▲ 160408F		●▲ 160408F		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412F		●▲ 160412F		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
For interrupted cutting of PIM	●▲ 3NU-TNGA 160404T		●▲ T-3NU-TNGA 160404T		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160408T		●▲ 160408T		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160412T		●▲ 160412T		1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 3NU-TNGA 160404PM <i>New</i>		●▲ T-3NU-TNGA 160404PM <i>New</i>		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●▲ 160408PM <i>New</i>		●▲ 160408PM <i>New</i>		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON Application Range Map



TRIANGULAR TYPE

NEGATIVE INSERT

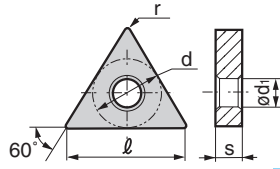
Indexable Inserts for Turning

TN

Triangular Type

Negative

With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

Negative Inserts

TN 1604

● l : 16.5 ● s : 4.76
 ● ϕd : 9.525 ● $\phi d1$: 3.81

●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder
 External Holders **C17** ~ **C21** **C49** **C51**
 Boring Bars **D47**

Condition	Coated CBN			CBN						PCD			
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200	
3-cornered	3NC-TNGA 160404 160408		0.4														
			0.8		●												
6-cornered	6NC-TNGA 160404 160408 160412		0.4	●	●	●	●										
			0.8	●	●	●	●										
			1.2	●	●	●	●										
6-cornered SV Rake Angle -35°	6NC-TNGG 160404N-SV 160408N-SV 160412N-SV		0.4														
			0.8				●										
			1.2														

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIBORON

1-cornered	TNMA 160402 160404 160408 160412		0.2															
			0.4					●										
			0.8					●										
			1.2					●										
Solid	TNGA 160408 160412		0.8												●			
			1.2												●			

● SUMIDIA (NF Type)

1-cornered	NF-TNMX 160402 160404 160408		0.2													●		
			0.4														●	
			0.8															●

● SUMIDIA (One-use Type)

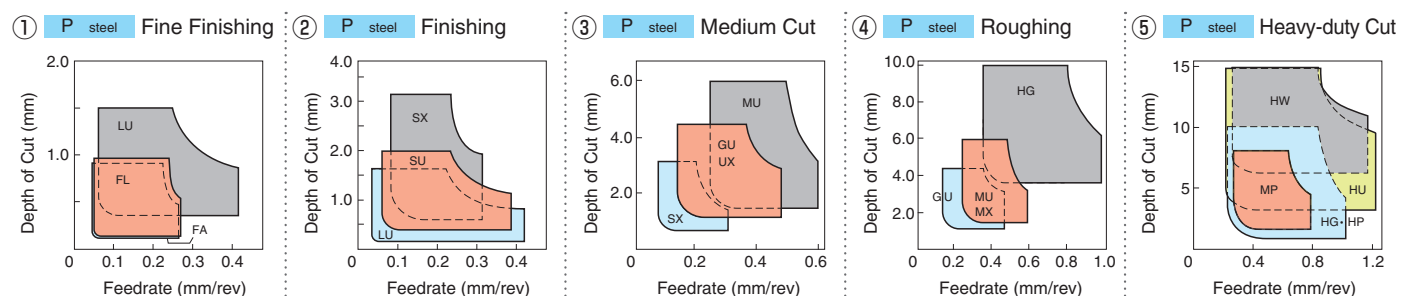
1-cornered	NU-TNMX 160402 160404 160408		0.2													○		
			0.4														○	
			0.8															○

※Depth-of-cut for one-use type is 0.5mm or less.

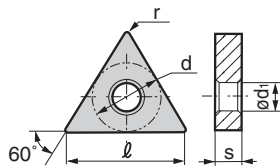
● SUMIDIA

1-cornered	TNMX 160404 160408 160412		0.4													●		
			0.8														●	
			1.2															●

Chipbreaker Application Range Map



TN Triangular Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 2204

- l : 22.0
- s : 4.76
- φd : 12.7
- φd1 : 5.16

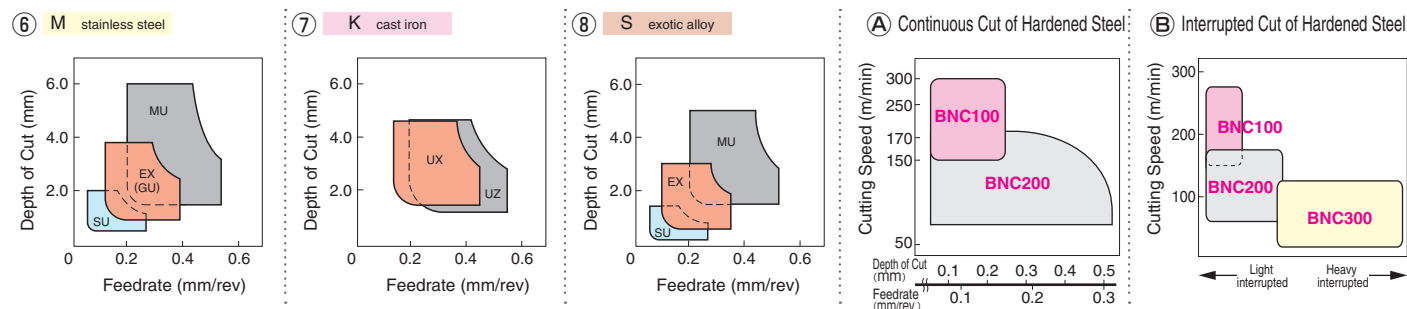
Page for Applicable Holder External Holders C17 ~ C21 Boring Bars D47

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

Shape	ISO Cat. No.	r	Application																										
			P	M	K	N	S	H	Coated Carbide	Coated Cermet	Cermets	Carbide	Ceramic																
GX Light cut Rake Angle 15° (Left-hand insert shown)	TNGG 220408R-GX	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408L-GX	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
SX Light-Medium cut Rake Angle 3°	TNMG 220404N-SX	0.4	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408N-SX	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412N-SX	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
GU Light-Medium cut Rake Angle 7°	TNMG 220404N-GU	0.4	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408N-GU	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412N-GU	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UX Light-Medium cut Rake Angle 0°	TNMG 220408N-UX	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412N-UX	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UG Medium cut Rake Angle 4°	TNMG 220408N-UG	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412N-UG	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220416N-UG	1.6	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UP Medium cut Rake Angle 10°	TNMG 220408N-UP	0.8	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412N-UP	1.2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UM Medium cut Rake Angle 14°	TNMG 220404R-UM	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220404L-UM	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408R-UM	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408L-UM	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UM Medium cut Rake Angle 14°	TNGG 220404R-UM	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220404L-UM	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408R-UM	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408L-UM	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
UM Medium cut Rake Angle 14°	TNMA 220404	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220408	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220412	1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220416	1.6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	220420	2.0	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

- Negative Inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

SUMIBORON Application Range Map



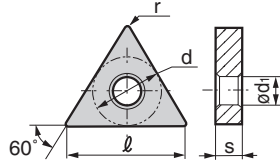
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
With Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- App. Map ③: Reference no. of chipbreaker
- Application Range Map (at the bottom of this page): Application Range Map
- Rake Angle 7°: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 2204

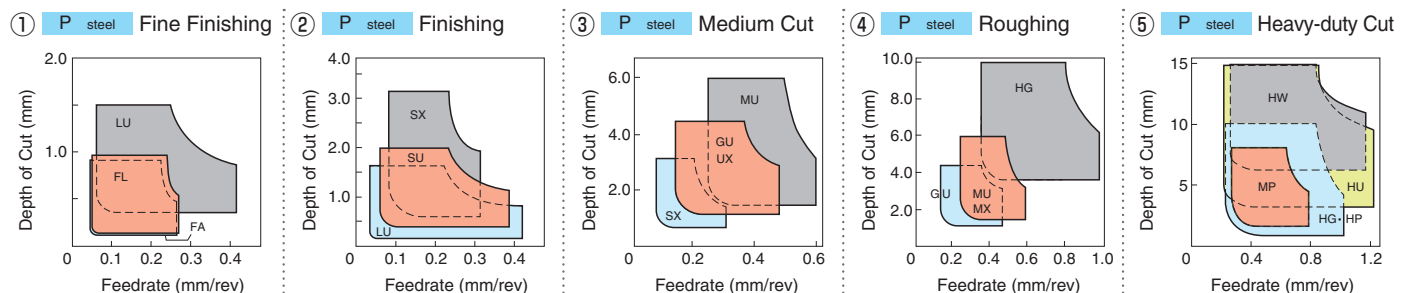
- l : 22.0
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.16

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T121A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders C17 ~ C21 Boring Bars D47

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T121A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Medium cut	TNGA 220404 220408 220412 220416	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medium-Rough cut	TNGG 220404R-MM 220404L-MM 220408R-MM 220408L-MM 220412R-MM 220412L-MM 220416R-MM 220416L-MM	0.4	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.4	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.4	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rough cut	TNMM 220408N-MP 220412N-MP 220416N-MP	0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		1.2	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.6	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Heavy cut	TNMM 220408N-HG 220412N-HG 220416N-HG	0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		1.2	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.6	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Heavy cut	TNMM 220408N-HP 220412N-HP 220416N-HP	0.8	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.2	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.6	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Chipbreaker Application Range Map

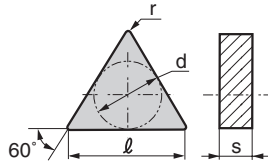


TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 1103

- l : 11.0
- s : 3.18
- ϕd : 6.35

●▲ = 1 piece pack Stacked
●○ = 1 piece pack and 10 pieces pack both Stacked

Page for Applicable Holder

External Holders **L46**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application													
				BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200	
Solid	TNGN 110308 110312		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sharp Edge Type	TNGN 110308F 110312F		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—

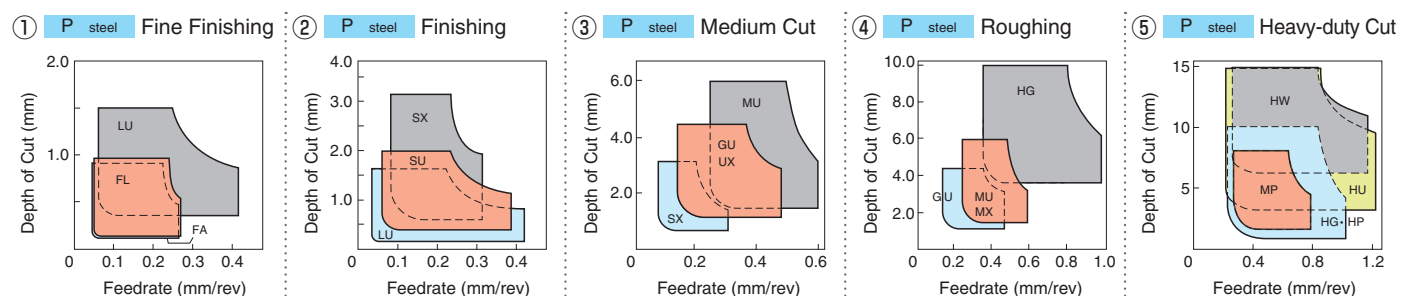
TN 1603

- l : 16.5
- s : 3.18
- ϕd : 9.525

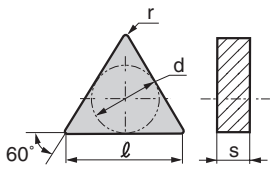
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r	Application																																
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C				
Medium cut	TNMN 160304 160308	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
TNGN 160304 160308 160312		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			

Chipbreaker Application Range Map



TN Triangular Type Negative Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

TN 1604

• l : 16.5 • s : 4.76
 • φ d : 9.525

Page for Applicable Holder External Holders **L46**

Shape	ISO Cat. No.	r
Medium cut	TNMN 160404 160408 160412 160416 160420	0.4
		0.8
		1.2
		1.6
		2.0
	TNGN 160404 160408 160412	0.4
		0.8
		1.2

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

TN 1604

• l : 16.5 • s : 4.76
 • φ d : 9.525

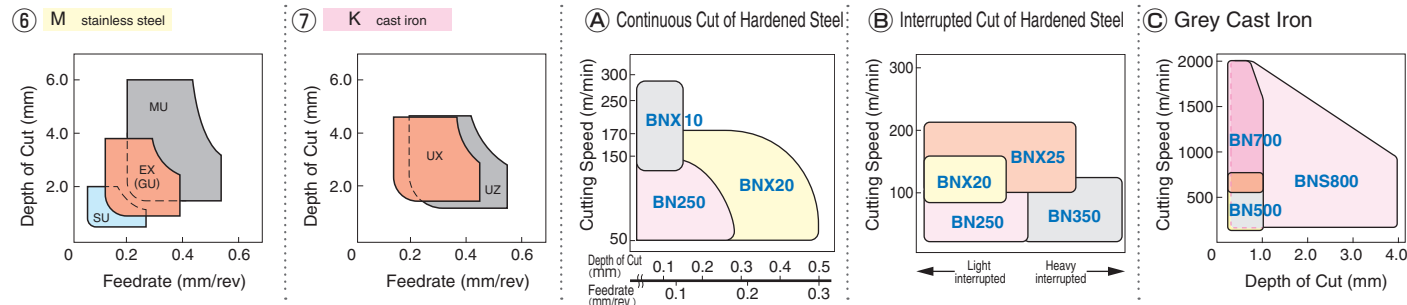
●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked
 Page for Applicable Holder External Holders **L46**

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	TNGN 160404 160408 160412		0.4 0.8 1.2
Solid	TNGN 160408 160412 160416 160420 <i>NEW</i>		0.8 1.2 1.6 2.0

Condition	Coated CBN			CBN						PCD				
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON Application Range Map

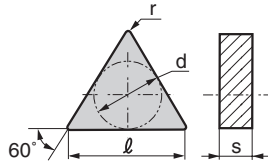


TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN Triangular Type
Negative
Without Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TN 2204

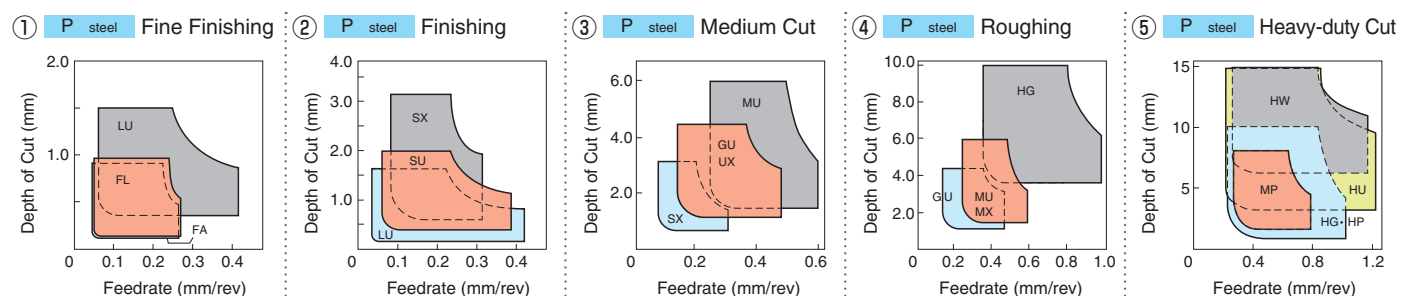
- l : 22.0
- s : 4.76
- ϕd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

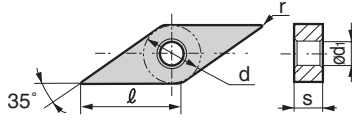
Shape	ISO Cat. No.	r
Medium cut	TNMN 220408 220412 220416	0.8
		1.2
		1.6
Medium cut	TNGN 220404 220408 220412 220416	0.4
		0.8
		1.2
		1.6

- Negative Inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



VN 35° Diamond Type
Negative
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VN 1604

- l : 16.6
- s : 4.76
- φd : 9.525
- φd1 : 3.81

Page for Applicable Holder External Holders **C23** **C24**

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide			Ceramic																		
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C							
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○						
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○						
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○						
Shape	FA		FL		LU		SP		SU		SU		SX		EX		GU		UX																	
ISO Cat. No.	VNMG 160404N-FA 160408N-FA		VNMG 160404N-FL 160408N-FL		VNMG 160402N-LU 160404N-LU 160408N-LU		VNMG 160404N-SP 160408N-SP		VNMG 160402N-SU 160404N-SU 160408N-SU		VNGG 160402N-SU 160404N-SU 160408N-SU		VNMG 160404N-SX 160408N-SX		VNMG 160404N-EX 160408N-EX		VNMG 160404N-GU 160408N-GU 160412N-GU		VNMG 160404N-UX 160408N-UX 160412N-UX																	
r	0.4 0.8		0.4 0.8		0.2 0.4 0.8		0.4 0.8		0.2 0.4 0.8		0.2 0.4 0.8		0.4 0.8		0.4 0.8		0.4 0.8 1.2		0.4 0.8 1.2																	
Fine finishing	●		●		●		●		●		●		●		●		●		●																	
Finishing	●		●		●		●		●		●		●		●		●		●																	
Light~Medium cut	●		●		●		●		●		●		●		●		●		●																	
Medium cut	●		●		●		●		●		●		●		●		●		●																	

Negative Inserts

C

D

R

S

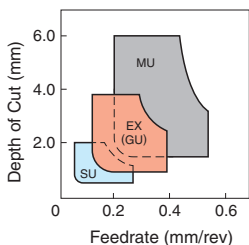
T

V

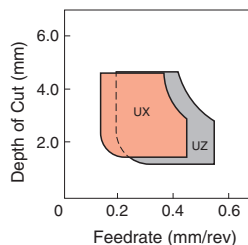
W

Solid CBN
Ceramic

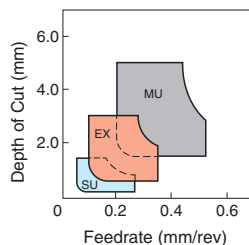
⑥ M stainless steel



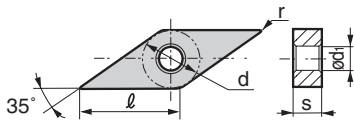
⑦ K cast iron



⑧ S exotic alloy



VN 35° Diamond Type Negative With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VN 1604

- l : 16.6
- s : 4.76
- φd : 9.525
- φd1 : 3.81

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C23 C24**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN700	BN500	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application																							
				P steel	M stainless steel	K cast iron	N non-ferrous metal	S exotic alloy	H hardened steel	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN700	BN500	BNS800	DA150	DA2200				
1-cornered		NU-VNMA 160401 160402 160404 160408 160412	T-NU-VNMA 160401 160402 160404 160408 160412	0.1																							
				0.2																							
				0.4																							
				0.8																							
				1.2																							
2-cornered		2NS-VNMA 160404 160408	T-NS-VNMA 160404 160408	0.4																							
				0.8																							
2-cornered		2NU-VNGA 160404 160408	T-2NU-VNGA 160404 160408	0.4																							
				0.8																							
				0.8																							
2-cornered		2NS-VNMA 160404 160408	T-2NS-VNMA 160404 160408	0.4																							
				0.8																							
2-cornered		2NU-VNMA 160404T 160408T	T-2NU-VNMA 160404T 160408T	0.4																							
				0.8																							

※Depth-of-cut for one-use type is 0.5mm or less.

Coated SUMIBORON (One-use Type)

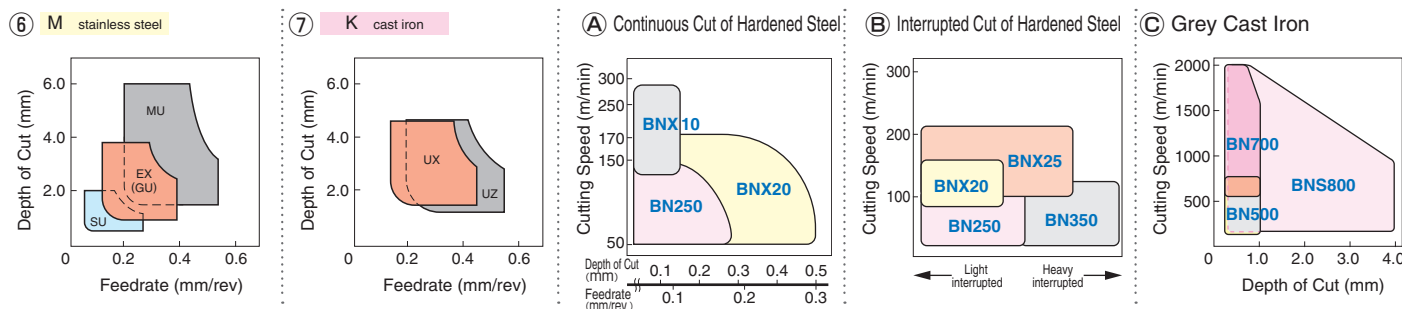
Shape	ISO Cat. No.	r	Application																					
			P steel	M stainless steel	K cast iron	N non-ferrous metal	S exotic alloy	H hardened steel	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN700	BN500	BNS800	DA150	DA2200		
2-cornered		2NC-VNMA 160404 160408	0.4																					
			0.8																					
4-cornered		4NC-VNMA 160404 160408 160412	0.4																					
			0.8																					
			1.2																					

※Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON

Shape	ISO Cat. No.	r	Application																				
			P steel	M stainless steel	K cast iron	N non-ferrous metal	S exotic alloy	H hardened steel	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN700	BN500	BNS800	DA150	DA2200	
1-cornered		VNMA 160404 160408	0.4																				
			0.8																				

SUMIBORON Application Range Map

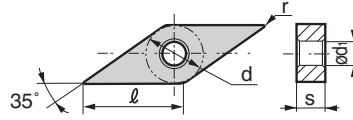


▲ mark : To be replaced by new item (Please confirm stock availability)

35° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

VN 35° Diamond Type
Negative
With Insert Hole



Information in "Shape" column

- 1: Name of chipbreaker
- 2: Reference no. of chipbreaker
- 3: Application Range Map (at the bottom of this page).
- 4: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

VN 1604

- l : 16.6
- s : 4.76
- phi d : 9.525
- phi d1 : 3.81

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C23** **C24**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NF-VNMX 160402 160404 160408 160412		0.2 0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (One-use Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NU-VNMX 160402 160404 160408 160412	0.2 0.4 0.8 1.2	○	○	○	○	○	○	○	○	○	○	○	○	○

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
1-cornered	VNMX 160402 160404 160408 160412	0.2 0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●

VN 2204

- l : 22.1
- s : 4.76
- phi d : 12.7
- phi d1 : 5.16

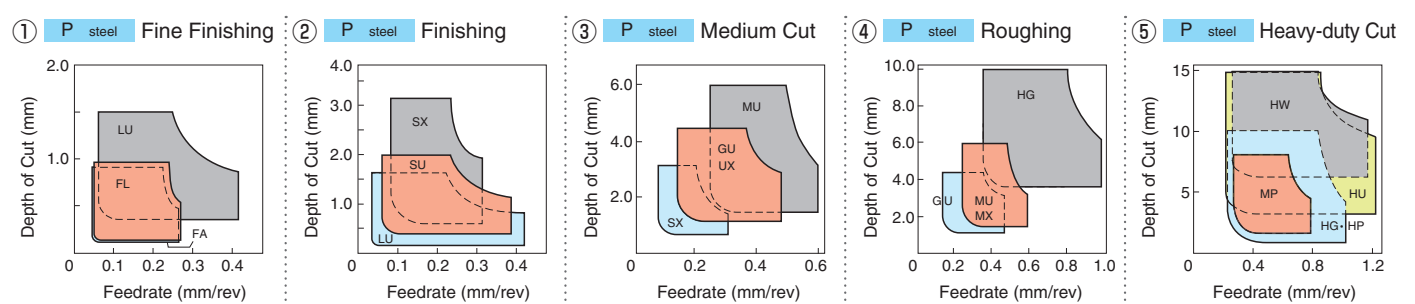
Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	GT1E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

VNMG 220408N-UZ
220412N-UZ

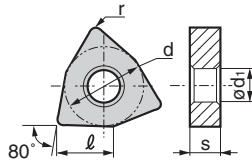
Shape: UZ (Medium-Rough cut, Rake Angle 4°)

ISO Cat. No. and r values as per table above.

Chipbreaker Application Range Map



WN Trigon Type Negative With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

WN 06T3

• l : 6.5 • s : 3.97
• phi d : 9.525 • phi d1 : 3.81

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SU Finishing Rake Angle 13°	WNMG 06T304N-SU 06T308N-SU	0.4 0.8
UG Medium cut Rake Angle 4°	WNMG 06T304N-UG 06T308N-UG	0.4 0.8

WN 0604

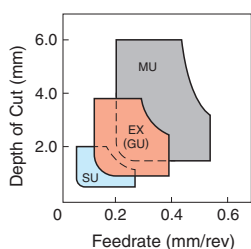
• l : 6.5 • s : 4.76
• phi d : 9.525 • phi d1 : 3.81

Page for Applicable Holder External Holders **C25**

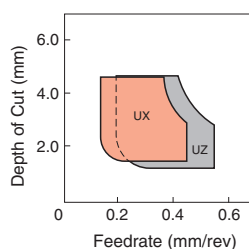
Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
LUW Finishing Rake Angle 10°	WNMG 060404N-LUW 060408N-LUW	0.4 0.8
SU Finishing Rake Angle 13°	WNMG 060404N-SU 060408N-SU	0.4 0.8
UG Medium cut Rake Angle 4°	WNMG 060404N-UG 060408N-UG	0.4 0.8
MU Medium-Rough cut Rake Angle 4°	WNMG 060408N-MU	0.8

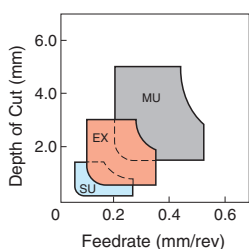
⑥ M stainless steel



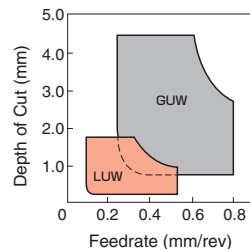
⑦ K cast iron



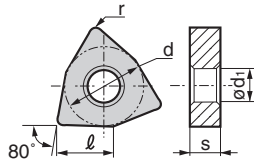
⑧ S exotic alloy



⑨ Wiper Insert



WN Trigon Type
Negative
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

WN 0804

• l : 8.7 • s : 4.76
• φd : 12.7 • φd1 : 5.16

Page for Applicable Holder External Holders **C25**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
GU Rake Angle 7°	WNMG 080404N-GU 080408N-GU 080412N-GU	0.4 0.8 1.2
GUW Rake Angle 0°	WNMG 080408N-GUW 080412N-GUW	0.8 1.2
UX Rake Angle 0°	WNMG 080404N-UX 080408N-UX 080412N-UX	0.4 0.8 1.2
UG Rake Angle 4°	WNMG 080404N-UG 080408N-UG 080412N-UG	0.4 0.8 1.2
UP Rake Angle 10°	WNMG 080408N-UP 080412N-UP	0.8 1.2
	WNMA 080408 080412 080416	0.8 1.2 1.6
MU Rake Angle 4°	WNMG 080408N-MU 080412N-MU	0.8 1.2
MX Rake Angle -15°	WNMG 080408N-MX 080412N-MX	0.8 1.2
UZ Rake Angle 4°	WNMG 080404N-UZ 080408N-UZ 080412N-UZ	0.4 0.8 1.2
MC Rake Angle -15°	WNMG 080408N-MC 080412N-MC	0.8 1.2

Negative Inserts

C

D

R

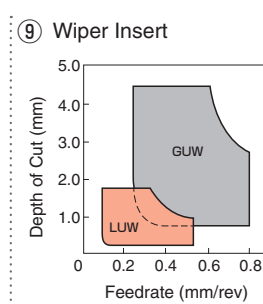
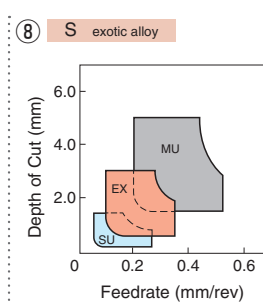
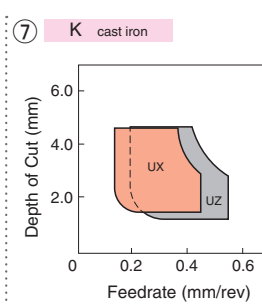
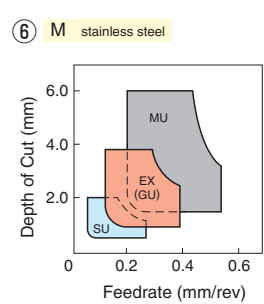
S

T

V

W

Solid CBN
Ceramic



▲ mark : To be replaced by new item (Please confirm stock availability)

TRIGON TYPE

NEGATIVE INSERT

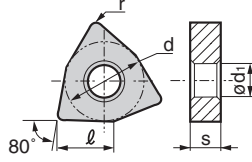
Indexable Inserts for Turning

WN

Trigon Type

Negative

With Insert Hole



Information in "Shape" column

- 1: Name of chipbreaker
- 2: Reference no. of chipbreaker
- 3: Application Range Map (at the bottom of this page).
- 4: Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

Negative Inserts

WN

0804

●●

● l : 8.7 ● s : 4.76
 ● ϕd : 12.7 ● $\phi d1$: 5.16

●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C25**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

● **SUMIBORON (One-use Type)**

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NU-WNMA 080404 080408	T-NU-WNMA 080404 080408	0.4 0.8	—	—	—	—	—	—	—	●	—	—	—	—	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

D

● **Coated SUMIBORON (One-use Type)**

6-cornered	6NC-WNGA 080404 080408 080412	—	0.4 0.8 1.2	●	●	●	—	—	—	—	—	—	—	—	—	—	—
------------	--	---	-------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---

※Depth-of-cut for one-use type is 0.5mm or less.

R

S

● **SUMIBORON**

1-cornered	WNMA 080404 080408 080412	—	0.4 0.8 1.2	—	—	—	—	●	●	—	—	—	—	—	—	—	—
------------	--	---	-------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---

T

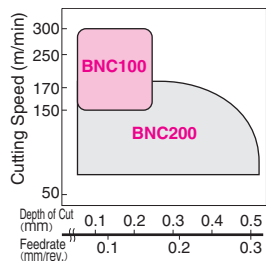
V

W

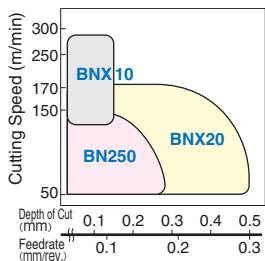
Solid CBN Ceramic

SUMIBORON Application Range Map

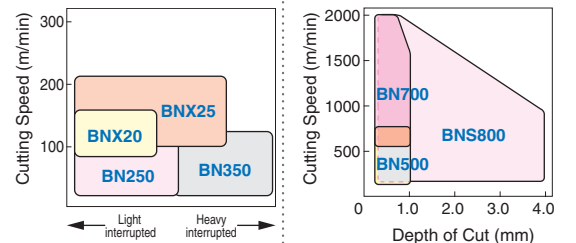
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron

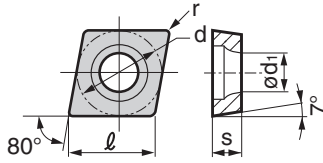


MEMO

80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CC 80° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 03X1

- l : 3.55 • s : 1.4
- ϕd : 3.5 • $\phi d1$: 1.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder | Boring Bars **D22**

Shape	ISO Cat. No.	r
Finishing FY Rake Angle 15° (Left-hand insert shown)	CCET 03X1003R-FY <i>New</i>	0.03
	03X1003L-FY <i>New</i>	0.03
	03X101R-FY <i>New</i>	0.1
	03X101L-FY <i>New</i>	0.1
	03X102R-FY <i>New</i>	0.2
	03X102L-FY <i>New</i>	0.2
	03X104R-FY <i>New</i>	0.4
	03X104L-FY <i>New</i>	0.4

CC 03X1

- l : 3.55 • s : 1.4
- ϕd : 3.5 • $\phi d1$: 1.8

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

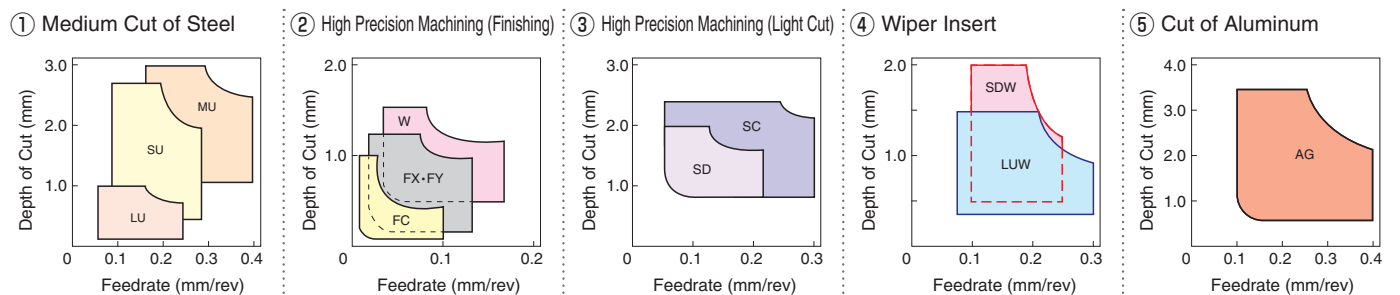
Page for Applicable Holder | Boring Bars **D22**

Condition	Coated CBN				CBN				PCD				
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

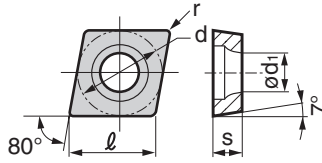
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	1-cornered	NU-CCEW 03X102F <i>New</i>	T-NU-CCEW 03X102F <i>New</i>
03X104F <i>New</i>		03X104F <i>New</i>	0.4
Small Edge Treatment Type	NU-CCEW 03X102S <i>New</i>	T-NU-CCEW 03X102S <i>New</i>	0.2
	03X104S <i>New</i>	03X104S <i>New</i>	0.4

*Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map



CC 80° Diamond Type
7° Relief
With Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 04X1

- l : 4.37
- s : 1.8
- φd : 4.3
- φd1 : 2.3

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Page for Applicable Holder Boring Bars **D22**

Shape	ISO Cat. No.	r
Finishing FY Rake Angle 15° (Left-hand insert shown)	CCET 04X1003R-FY <i>New</i>	0.03
	04X1003L-FY	0.03
	04X101R-FY <i>New</i>	0.1
	04X101L-FY	0.1
	04X102R-FY <i>New</i>	0.2
	04X102L-FY	0.2
	04X104R-FY <i>New</i>	0.4
	04X104L-FY	0.4

CC 04X1

- l : 4.37
- s : 1.8
- φd : 4.3
- φd1 : 2.3

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder Boring Bars **D22**

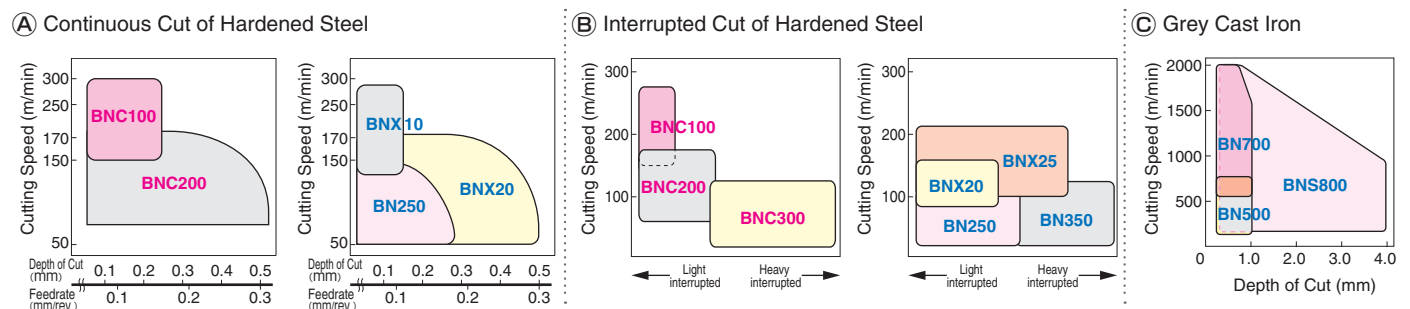
Condition	Coated CBN				CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered Sharp Edge Type	NU-CCEW 04X102F 04X104F <i>New</i>	T-NU-CCEW 04X102F 04X104F <i>New</i>	0.2 0.4
	NU-CCEW 04X102S 04X104S <i>New</i>	T-NU-CCEW 04X102S 04X104S <i>New</i>	0.2 0.4
Small Edge Treatment Type 			

※Depth-of-cut for one-use type is 0.5mm or less.

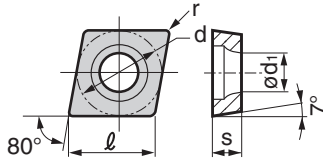
SUMIBORON Application Range Map



80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CC 80° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 0602

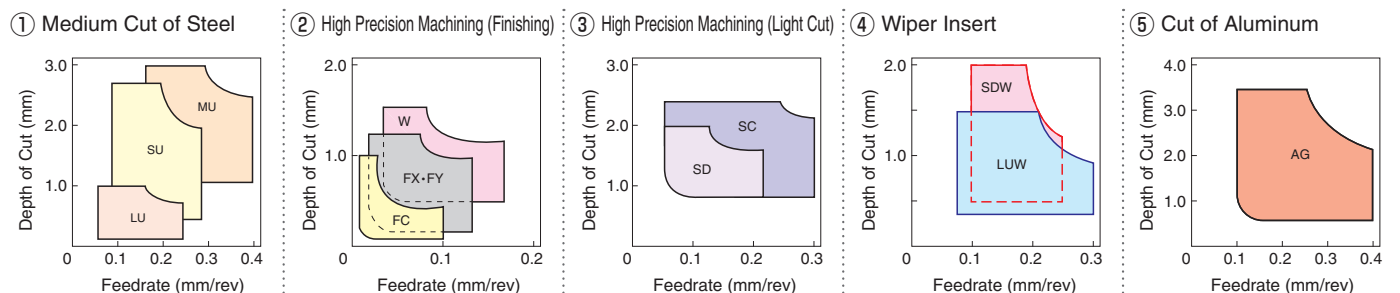
- l : 6.4
- s : 2.38
- ϕd : 6.35
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

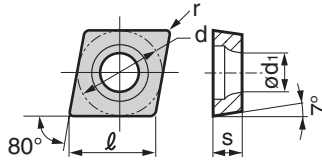
Page for Applicable Holder External Holders C47 C51 C56 Boring Bars D21 D22

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
LU Rake Angle 12°	CCMT 060202N-LU 060204N-LU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
FP Rake Angle 10°	CCMT 060208N-FP	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
FC Rake Angle 15°	CCGT 060201N-FC 060202N-FC 060204N-FC	0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
FX Rake Angle 15°	CCGT 0602003R-FX 0602003L-FX 060201R-FX 060201L-FX 060202R-FX 060202L-FX 060204R-FX 060204L-FX	0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
FX Rake Angle 14°	CCET 0602003R-FX 0602003L-FX 060201R-FX 060201L-FX 060202R-FX 060202L-FX 060204R-FX 060204L-FX	0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
FY Rake Angle 15° (Left-hand insert shown)	CCET 0602003R-FY 0602003L-FY 060201R-FY 060201L-FY 060202R-FY 060202L-FY 060204R-FY 060204L-FY	0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.03	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map



CC 80° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 0602

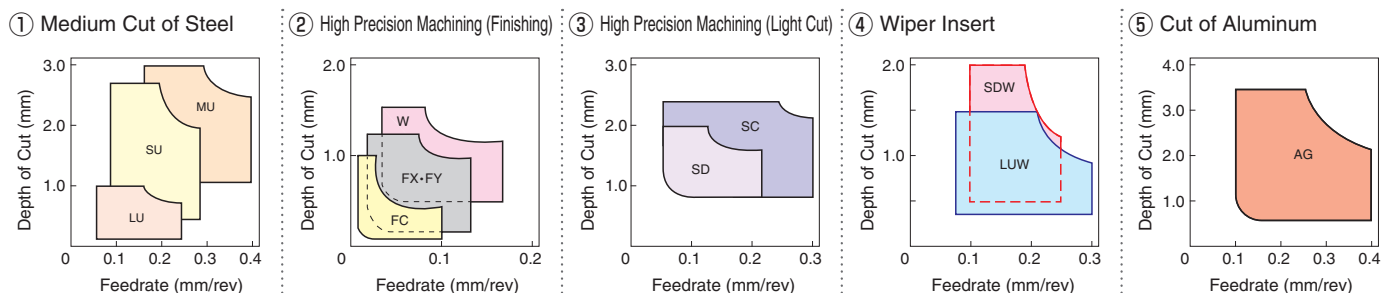
- l : 6.4
- s : 2.38
- φ d : 6.35
- φ d1 : 2.8

Page for Applicable Holder External Holders C47 C51 C56 Boring Bars D21 D22

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Shape	FZ		SU		SC		SC		CCMW		CCGW		AG																	
ISO Cat. No.	CCGT 0602003R-FZ 0602003L-FZ 060201R-FZ 060201L-FZ 060202R-FZ 060202L-FZ		CCMT 060202N-SU 060204N-SU 060208N-SU		CCMT 060204N-SC		CCGT 0602003N-SC 060201N-SC 060202N-SC		CCMW 060204		CCGW 060200 060201		CCGT 060202N-AG 060204N-AG																	
r	0.03	0.03	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.03	0.1	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

80° DIAMOND TYPE POSITIVE INSERT

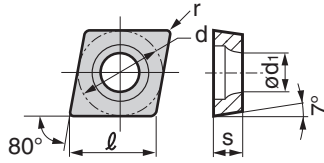
Indexable Inserts for Turning

CC

80° Diamond Type

7° Relief

With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

CC

0602

●●

● l : 6.4 ● s : 2.38
 ● ϕd : 6.35 ● $\phi d1$: 2.8

●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders C47 C51 C56

Boring Bars D21 D22

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

● **SUMIBORON (One-use Type)**

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-CCGW 060202 060204 060208	T-NU-CCGW 060202 060204 060208	0.2 0.4 0.8
	NU-CCGW 060202M New 060204M New 060208M New	T-NU-CCGW 060202M New 060204M New 060208M New	0.2 0.4 0.8

D

R

※Depth-of-cut for one-use type is 0.5mm or less.

S

● **Coated SUMIBORON (One-use Type)**

Shape	1 piece pack ISO Cat. No.	r
	2NC-CCGW 060202 060204	0.2 0.4

※Depth-of-cut for one-use type is 0.5mm or less.

T

● **SUMIDIA (NF Type)**

Shape	1 piece pack ISO Cat. No.	r
	NF-CCMT 060201 060202 060204	0.1 0.2 0.4

V

● **SUMIDIA (One-use Type)**

Shape	1 piece pack ISO Cat. No.	r
	DM NU-CCMT 060202R-DM 060202L-DM 060204R-DM 060204L-DM	0.2 0.2 0.4 0.4

※Depth-of-cut for one-use type is 0.5mm or less.

W

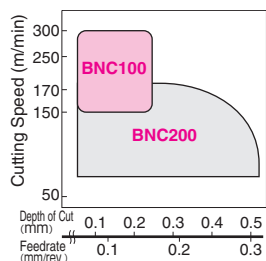
● **SUMIDIA**

Shape	1 piece pack ISO Cat. No.	r
	CCMT 060201 060202 060204	0.1 0.2 0.4

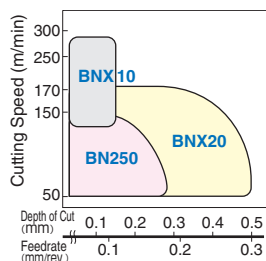
Solid CBN Ceramic

SUMIBORON Application Range Map

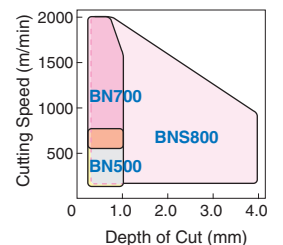
Ⓐ Continuous Cut of Hardened Steel



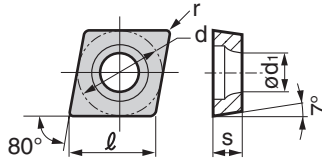
Ⓑ Interrupted Cut of Hardened Steel



Ⓒ Grey Cast Iron



CC 80° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 0802

- l : 8.0 • s : 2.38
- phi d : 7.94 • phi d1 : 3.4

Condition	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC App. Map ③ Rake Angle 6°	CCMT 080204N-SC	0.4
SC App. Map ③ Rake Angle 6°	CCGT 080201N-SC 080202N-SC	0.1 0.2
	CCGW 080200 080201	0 0.1

CC 0803

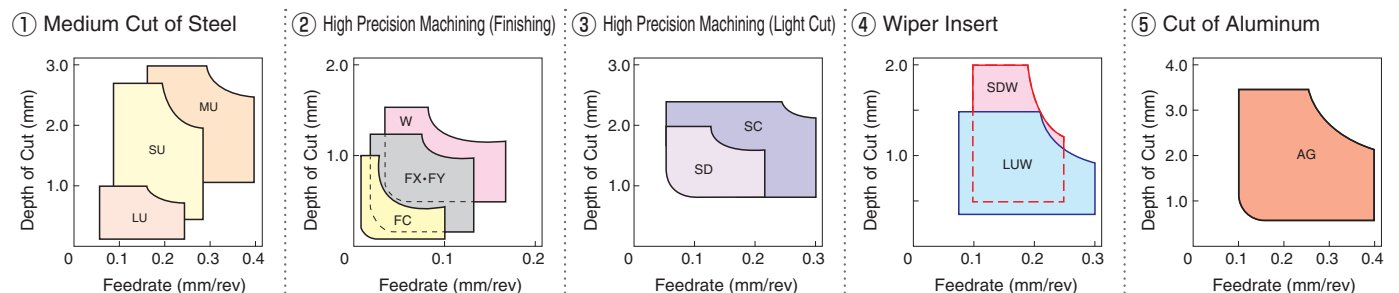
- l : 8.0 • s : 3.18
- phi d : 7.94 • phi d1 : 3.4

Condition	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC App. Map ③ Rake Angle 6°	CCMT 080304N-SC	0.4

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map

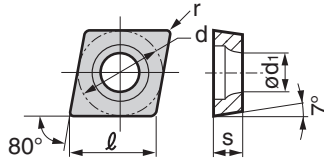


80° DIAMOND TYPE

POSITIVE INSERT

Indexable Inserts for Turning

CC 80° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- App. Map ③: Reference no. of chipbreaker
- Application Range Map (at the bottom of this page): Application Range Map
- Rake Angle 7°: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 0903

- l : 9.7
- s : 3.18
- phi d : 9.525
- phi d1 : 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC	CCMT 090308N-SC	0.8
SC	CCGT 090301N-SC 090302N-SC	0.1 0.2
CCGW	090300 090301	0 0.1

CC 09T3

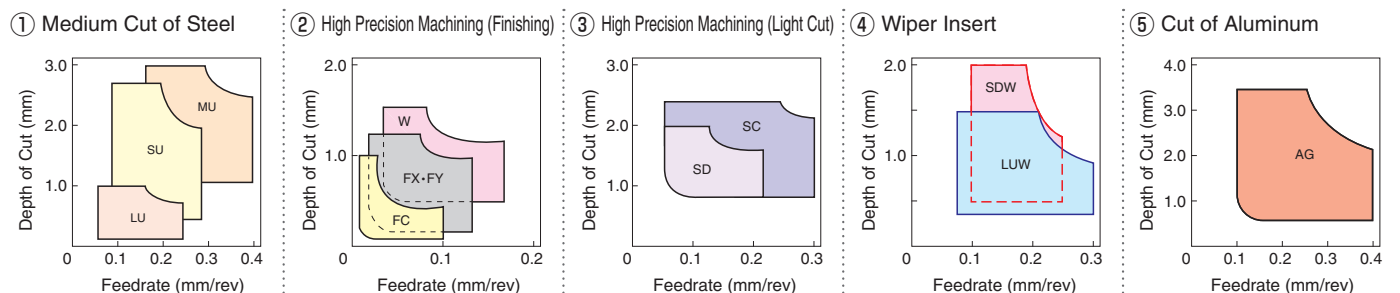
- l : 9.7
- s : 3.97
- phi d : 9.525
- phi d1 : 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder: External Holders C47 C51 C56 Boring Bars D21 D22

Shape	ISO Cat. No.	r
LU	CCMT 09T304N-LU 09T308N-LU	0.4 0.8
Luw	CCMT 09T304N-Luw 09T308N-Luw	0.4 0.8
FP	CCMT 09T302N-FP	0.2
FC	CCGT 09T301N-FC 09T302N-FC 09T304N-FC	0.1 0.2 0.4

Chipbreaker Application Range Map

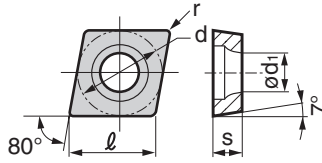


CC

80° Diamond Type

7° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC
09T3

• l : 9.7

• φd : 9.525

• s : 3.97

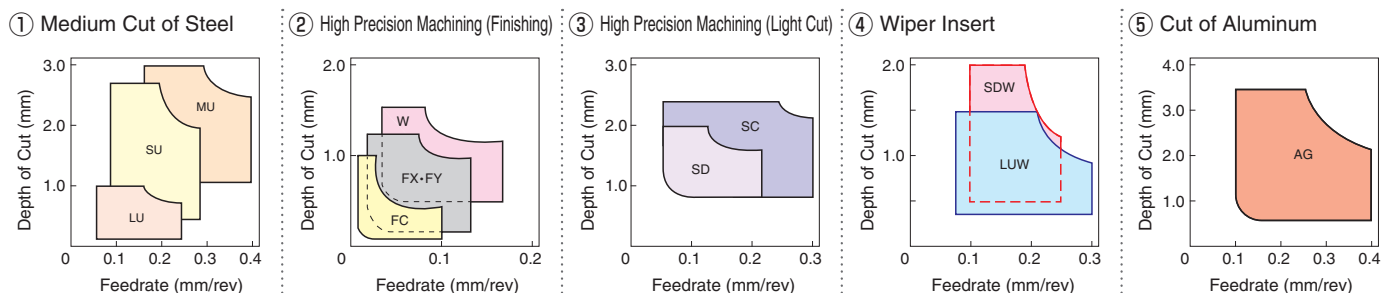
• φd1 : 4.4

Page for Applicable Holder External Holders C47 C51 C56 Boring Bars D21 D22

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	CCGT 09T3003R-FX 09T3003L-FX 09T301R-FX 09T301L-FX 09T302R-FX 09T302L-FX 09T304R-FX 09T304L-FX 09T308R-FX 09T308L-FX		r	0.03	0.03	0.1	0.1	0.2	0.2	0.4	0.4	0.8	0.8																
Finishing	CCET 09T3003R-FX 09T3003L-FX 09T301R-FX 09T301L-FX 09T302R-FX 09T302L-FX 09T304R-FX 09T304L-FX		r	0.03	0.03	0.1	0.1	0.2	0.2	0.4	0.4																		
	CCET 09T3003R-FY 09T3003L-FY 09T301R-FY 09T301L-FY 09T302R-FY 09T302L-FY 09T304R-FY 09T304L-FY		r	0.03	0.03	0.1	0.1	0.2	0.2	0.4	0.4																		
	CCGT 09T3003R-FZ 09T3003L-FZ 09T301R-FZ 09T301L-FZ 09T302R-FZ 09T302L-FZ 09T304R-FZ 09T304L-FZ		r	0.03	0.03	0.1	0.1	0.2	0.2	0.4	0.4																		
			r	0.03	0.03	0.1	0.1	0.2	0.2	0.4	0.4																		

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

80° DIAMOND TYPE POSITIVE INSERT

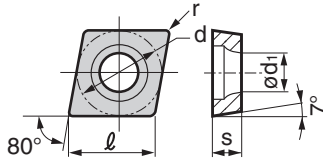
Indexable Inserts for Turning

CC

80° Diamond Type

7° Relief

With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC
09T3

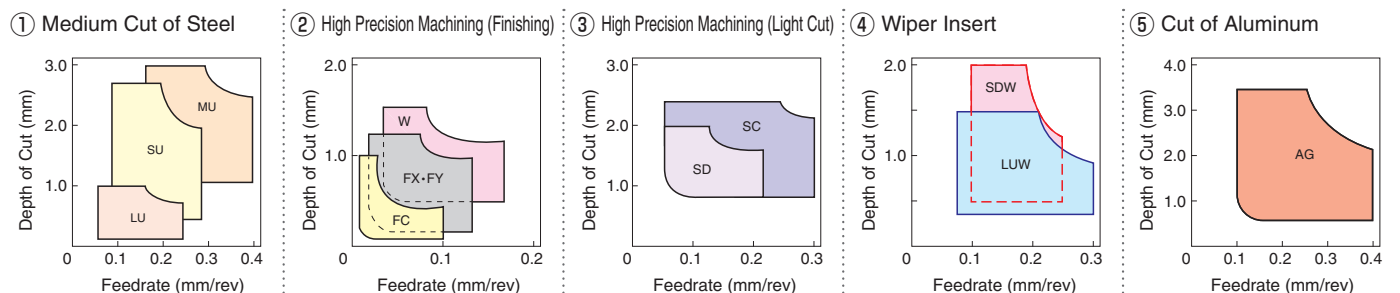
- ℓ : 9.7 • s : 3.97
- ϕd : 9.525 • $\phi d1$: 4.4

Page for Applicable Holder External Holders C47 C51 C56 Boring Bars D21 D22

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	SU										SC			CCMW			CCGW			MU		AG								
ISO Cat. No.	CCMT 09T302N-SU 09T304N-SU 09T308N-SU										CCGT 09T3003N-SC 09T301N-SC 09T302N-SC			09T304 09T308			09T300 09T301			09T304N-MU 09T308N-MU		09T302N-AG 09T304N-AG 09T308N-AG								
r	0.2 0.4 0.8										0.03 0.1 0.2			0.4 0.8			0 0.1			0.4 0.8		0.2 0.4 0.8								

Solid CBN Ceramic

Chipbreaker Application Range Map

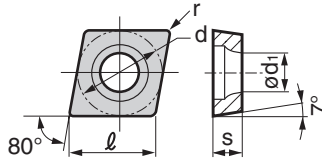


CC

80° Diamond Type

7° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

CC 09T3

- l : 9.7 • s : 3.97
- ϕd : 9.525 • $\phi d1$: 4.4

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders C47 C51 C56

Boring Bars D21 D22

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-CCGW 09T302 09T304 09T308	T-NU-CCGW 09T302 09T304 09T308	0.2
			0.4
			0.8
	NU-CCGW 09T302M New 09T304M New 09T308M New	T-NU-CCGW 09T302M New 09T304M New 09T308M New	0.2
			0.4
			0.8

※Depth-of-cut for one-use type is 0.5mm or less.

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	r
	2NC-CCGW 09T302 09T304 09T308	0.2
		0.4
		0.8

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	r
	NF-CCMT 09T301 09T302 09T304 09T308	0.1
		0.2
		0.4
		0.8

● SUMIDIA (One-use Type)

Shape	1 piece pack ISO Cat. No.	r
	NU-CCMT 09T302R-DM 09T302L-DM 09T304R-DM 09T304L-DM	0.2
		0.2
		0.4
		0.4

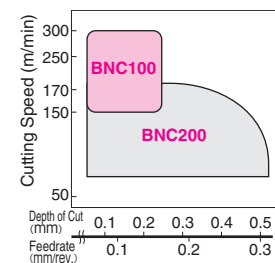
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

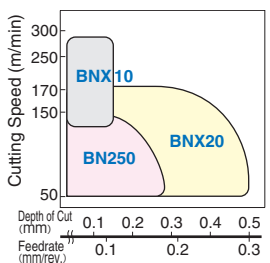
Shape	1 piece pack ISO Cat. No.	r
	CCMT 09T301 09T302 09T304	0.1
		0.2
		0.4

SUMIBORON Application Range Map

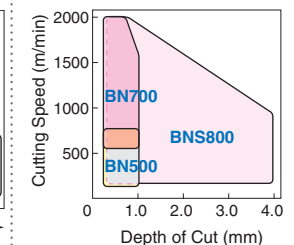
① Continuous Cut of Hardened Steel



② Interrupted Cut of Hardened Steel



③ Grey Cast Iron

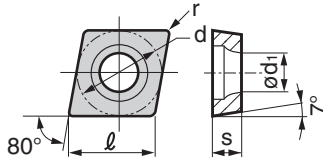


▲ mark : To be replaced by new item (Please confirm stock availability)

80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CC 80° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CC 1204

- l : 12.9
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.5

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder | Boring Bars **D21**

Shape	ISO Cat. No.	r
FP Finishing Rake Angle 10°	CCMT 120404N-FP 120408N-FP	0.4 0.8
SU Light cut Rake Angle 8° App. Map ①	CCMT 120404N-SU 120408N-SU	0.4 0.8
SC Light cut Rake Angle 6° App. Map ③	CCMT 120408N-SC	0.8

positive inserts

C

D

R

S

T

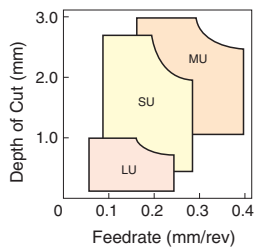
V

W

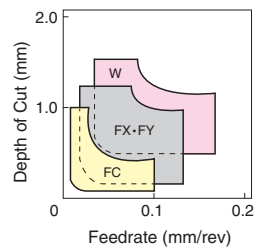
Solid CBN Ceramic

Chipbreaker Application Range Map

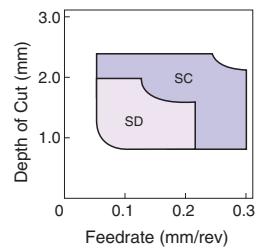
① Medium Cut of Steel



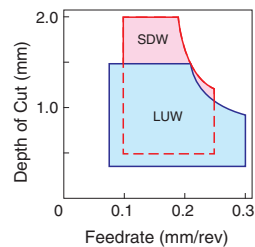
② High Precision Machining (Finishing)



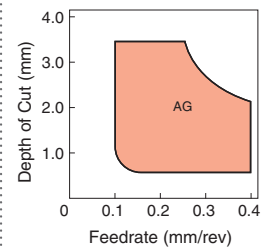
③ High Precision Machining (Light Cut)



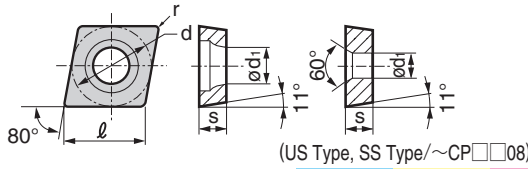
④ Wiper Insert



⑤ Cut of Aluminum



CP 80° Diamond Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

CP 0602

- l : 6.4
- s : 2.38
- phi d : 6.35
- phi d1 : 2.8

Shape	ISO Cat. No.	r
Finishing FX Rake Angle 15°	CPGT 060204L-FX	0.4
Light cut US Rake Angle 10°	CPMT 060204N-US	0.4

Condition	Coated Carbide														Coated Cermet	Cermet			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

CP 0802

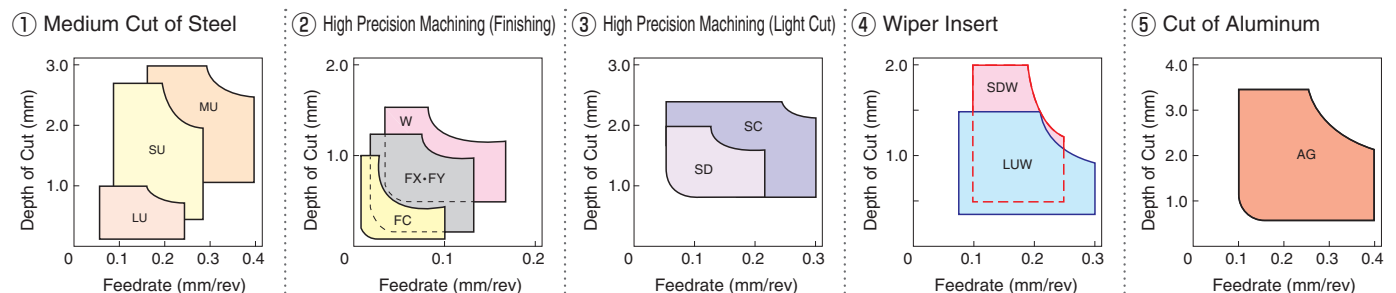
- l : 8.0
- s : 2.38
- phi d : 7.94
- phi d1 : 3.4

Page for Applicable Holder Boring Bars **D26**

Shape	ISO Cat. No.	r
Finishing LU Rake Angle 12°	CPMT 080204N-LU	0.4
Finish-Light cut SD Rake Angle 0°	CPGT 080202N-SD 080204N-SD 080208N-SD	0.2 0.4 0.8
Light cut SU Rake Angle 8°	CPMT 080204N-SU 080208N-SU	0.4
		0.8
SS Rake Angle 5°	CPMT 080208N-SS	0.8
	CPMW 080204 080208	0.4
		0.8
Light-Medium cut MU Rake Angle 0°	CPMT 080204N-MU 080208N-MU	0.4
		0.8

Condition	Coated Carbide														Coated Cermet	Cermet			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

80° DIAMOND TYPE POSITIVE INSERT

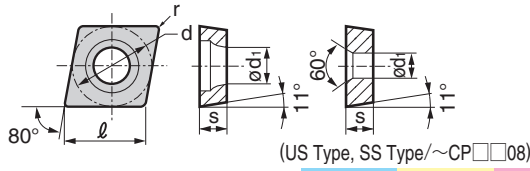
Indexable Inserts for Turning

CP

80° Diamond Type

11° Relief

With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

CP 0802

- l : 8.0 • s : 2.38
- ϕd : 7.94 • $\phi d1$: 3.4

●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars D26

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-CPGW 080202 080204 080208	T-NU-CPGW 080202 080204 080208	0.2 0.4 0.8
	NU-CPGW 080202M New 080204M New 080208M New	T-NU-CPGW 080202M New 080204M New 080208M New	0.2 0.4 0.8

*Depth-of-cut for one-use type is 0.5mm or less.

D

R

S

● SUMIDIA

Shape	ISO Cat. No.	r
	CPMT 080202 080204 080208	0.2 0.4 0.8

T

CP

0803

- l : 8.0 • s : 3.18
- ϕd : 7.94 • $\phi d1$: 3.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

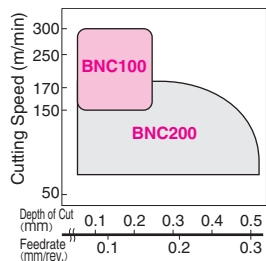
V

Shape	ISO Cat. No.	r
	CPMT 080308N-US	0.8

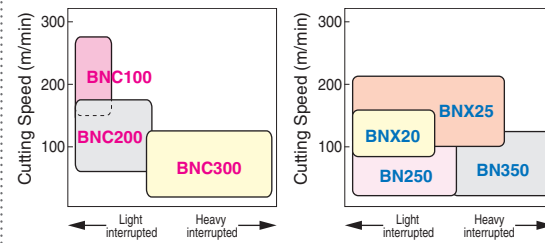
W
Solid CBN Ceramic

SUMIBORON Application Range Map

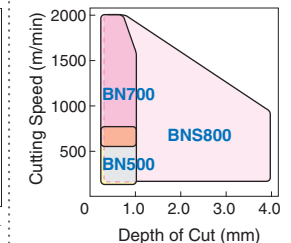
(A) Continuous Cut of Hardened Steel



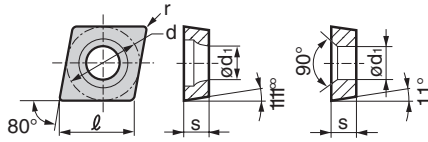
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



CP 80° Diamond Type
11° Relief
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

(US Type, SS Type/CP□□09~)

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CP 0903

• l : 9.7 • s : 3.18
• φd : 9.525 • φd1 : 4.4

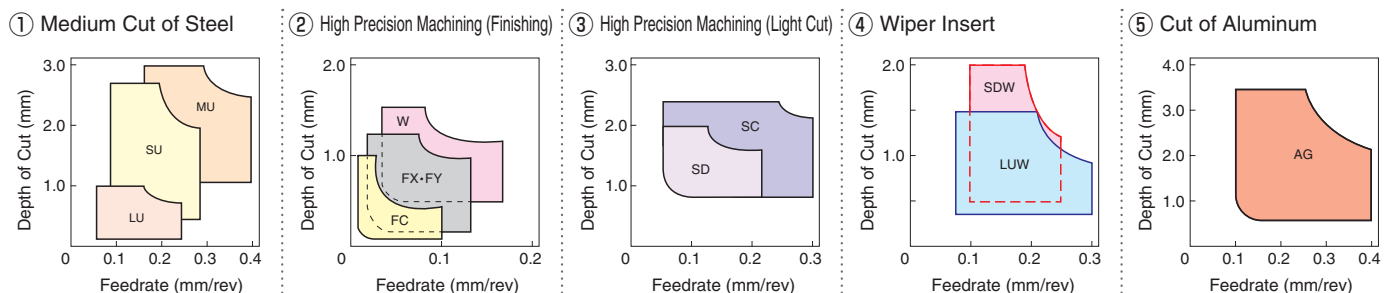
Page for Applicable Holder Boring Bars **D26**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Finishing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Light cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Light-Medium cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
LU Rake Angle 12°	CPMT 090304N-LU 090308N-LU	0.4 0.8
LUW Rake Angle 10°	CPMT 090304N-LUW 090308N-LUW	0.4 0.8
SD Rake Angle 0°	CPGT 090302N-SD 090304N-SD 090308N-SD	0.2 0.4 0.8
SU Rake Angle 0°	CPMT 090304N-SU 090308N-SU	0.4 0.8
SS Rake Angle 5°	CPMH 090308N-SS	0.8
US Rake Angle 10°	CPMH 090304N-US 090308N-US	0.4 0.8
CPMW	CPMW 090304 090308	0.4 0.8
MU Rake Angle 0°	CPMT 090304N-MU 090308N-MU	0.4 0.8

positive inserts
C
D
R
S
T
V
W
Solid CBN Ceramic

Chipbreaker Application Range Map

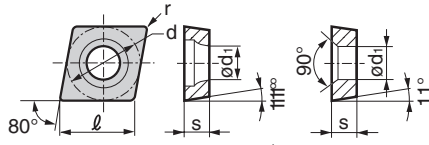


▲ mark : To be replaced by new item (Please confirm stock availability)

80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CP 80° Diamond Type
11° Relief
With Insert Hole



(US Type, SS Type/CP□□09~)

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

positive inserts

CP 0903

- l : 9.7
- s : 3.18
- ϕd : 9.525
- $\phi d1$: 4.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D26**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	 NU-CPGW 090302 090304 090308	T-NU-CPGW 090302 090304 090308	0.2 0.4 0.8	—	—	—	—	—	—	—	●	—	—	—	—	—	—
1-cornered	 NU-CPGW 090302M 090304M 090308M	T-NU-CPGW 090302M 090304M 090308M	0.2 0.4 0.8	—	—	—	—	—	—	—	●	—	—	—	—	—	—

*Depth-of-cut for one-use type is 0.5mm or less.

D

R

S

T

V

● SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	 NF-CPMT 090302 090304 090308	0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	 CPMT 090302 090304 090308	0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

W

Solid CBN Ceramic

CP 09T3

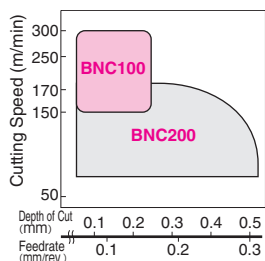
- l : 9.7
- s : 3.97
- ϕd : 9.525
- $\phi d1$: 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

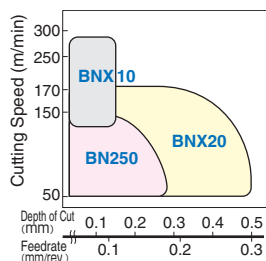
Shape	ISO Cat. No.	r
Finishing FX Rake Angle 15°	CPGT 09T308L-FX	0.8
Light cut US Rake Angle 10°	CPMT 09T308N-US	0.8

SUMIBORON Application Range Map

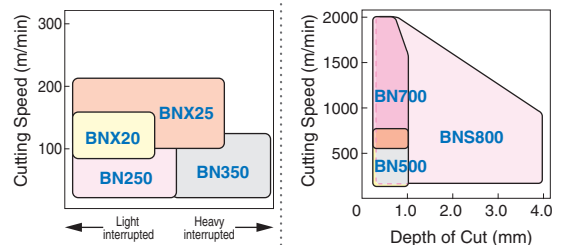
(A) Continuous Cut of Hardened Steel



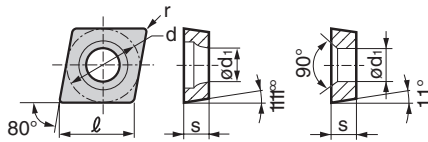
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



CP 80° Diamond Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

(US Type, SS Type/CP□□09~)

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

CP 1204

- l : 12.9
- s : 4.76
- φd : 12.7
- φd1 : 5.5

Page for Applicable Holder Boring Bars **D26**

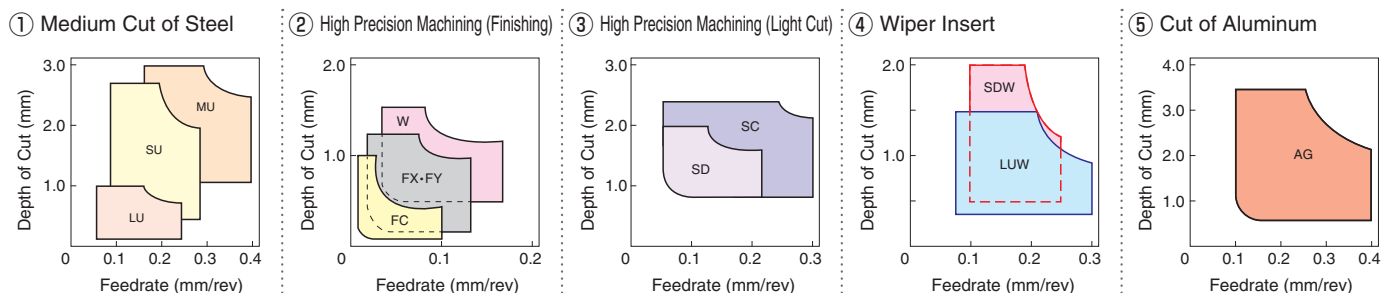
Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Shape	SD			US																										
ISO Cat. No.	CPGT 120402N-SD 120404N-SD 120408N-SD			CPMH 120408N-US																										
r	0.2 0.4 0.8			0.8																										

CP 1604

- l : 16.1
- s : 4.76
- φd : 15.875
- φd1 : 6.5

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic								
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Shape	US																													
ISO Cat. No.	CPMH 160408N-US																													
r	0.8																													

Chipbreaker Application Range Map

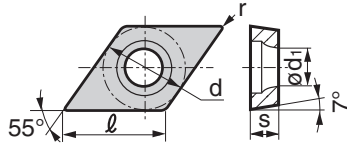


▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

DC 55° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DC 0702

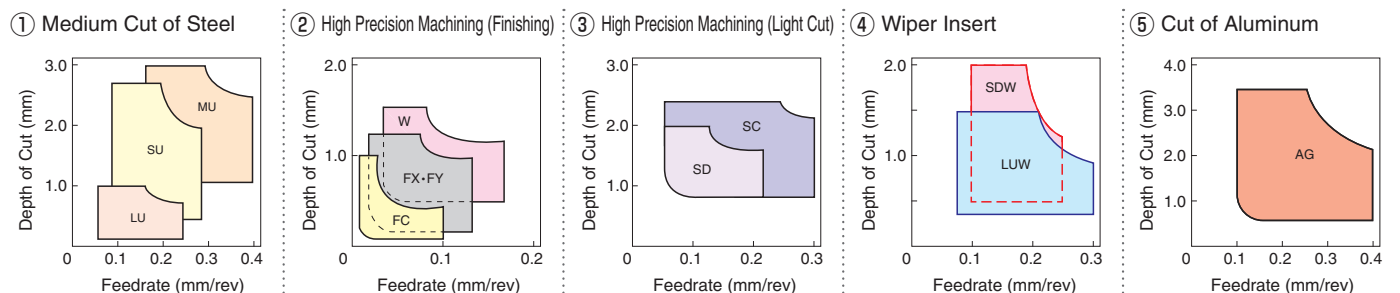
- l : 7.7
- s : 2.38
- ϕd : 6.35
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders C48 C50 C52 Boring Bars D30 D31

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C				
LU Rake Angle 12°	DCMT 070202N-LU 070204N-LU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○			
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○		
FC Rake Angle 15°	DCGT 070201N-FC 070202N-FC 070204N-FC	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○			
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○			
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○			
FX Rake Angle 15°	DCGT 0702003R-FX 0702003L-FX 070201R-FX 070201L-FX 070202R-FX 070202L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○			
		0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○		
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○		
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	
Finishing FX Rake Angle 14°	DCET 0702003R-FX 0702003L-FX 0702008R-FX 0702008L-FX 070201R-FX 070201L-FX 0702018R-FX 0702018L-FX 070204R-FX 070204L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○		
		0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
		0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
		0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
FY Rake Angle 15°	DCGT 0702003R-FY 0702003L-FY 070201R-FY 070201L-FY 070202R-FY 070202L-FY 070204R-FY 070204L-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○		
		0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	
		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map

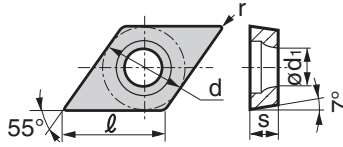


DC

55° Diamond Type

7° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DC 0702

- l : 7.7
- ϕd : 6.35

- s : 2.38
- $\phi d1$: 2.8

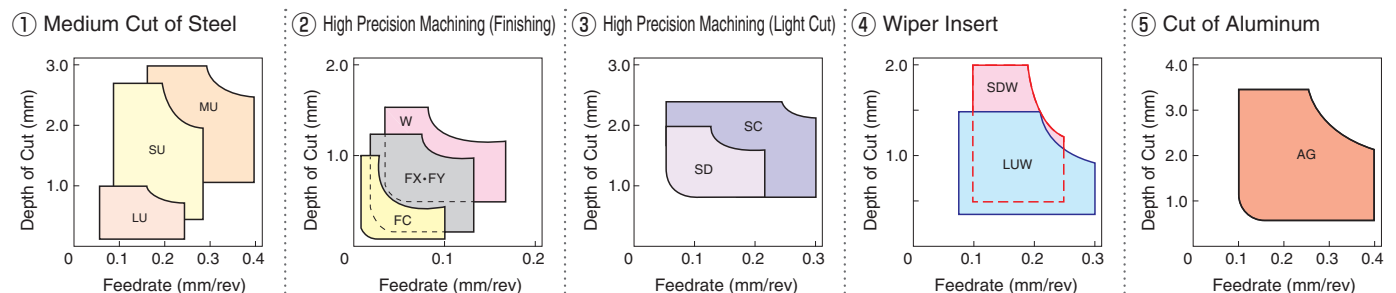
Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders C48 C50 C52 Boring Bars D30 D31

Shape	ISO Cat. No.	r	Application																													
			P	M	K	N	S	H	P	M	K	N	S	H	P	M	K	N	S	H	P	M	K	N	S	H	P	M	K	N	S	H
Finishing FY Rake Angle 15°	DCET 0702003R-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	0702003L-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	0702008R-FY	0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	0702008L-FY	0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	070201R-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	070201L-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	0702018R-FY	0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	0702018L-FY	0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	070204R-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	070204L-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Finish-Light cut SD Rake Angle 0° (Left-hand insert shown)	DCGT 070202R-SD	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070202L-SD	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070204R-SD	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070204L-SD	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Light cut SU Rake Angle 8°	DCMT 070202N-SU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070204N-SU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070208N-SU	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Light cut SC Rake Angle 6°	DCGT 0702003N-SC	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
070201N-SC		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
070202N-SC		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
070204N-SC		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Light cut DCMW 	070204	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070208	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Light cut DCGW 	070200	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070201	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
For Al. use AG Rake Angle 20°	DCGT 070202N-AG	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	070204N-AG	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE POSITIVE INSERT

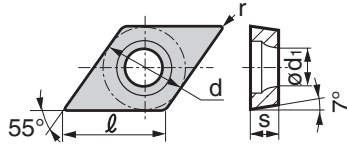
Indexable Inserts for Turning

DC

55° Diamond Type

7° Relief

With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

DC 0702

- l : 7.7 ● s : 2.38
- ϕd : 6.35 ● $\phi d1$: 2.8

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C48** **C50** **C52**

Boring Bars **D30** **D31**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-DCGW 070202	T-NU-DCGW 070202	0.2
	070204	070204	0.4
	070208	070208	0.8
	NU-DCGW 070202M <i>New</i>	T-NU-DCGW 070202M <i>New</i>	0.2
	070204M <i>New</i>	070204M <i>New</i>	0.4
	070208M <i>New</i>	070208M <i>New</i>	0.8

※Depth-of-cut for one-use type is 0.5mm or less.

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	r
	2NC-DCGW 070202	0.2
	070204	0.4

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	r
	NF-DCMT 070201	0.1
	070202	0.2
	070204	0.4

● SUMIDIA (One-use Type)

Shape	1 piece pack ISO Cat. No.	r
	DM	0.2
	NU-DCMT 070202R-DM	0.2
	070202L-DM	0.2
	070204R-DM	0.4
	070204L-DM	0.4

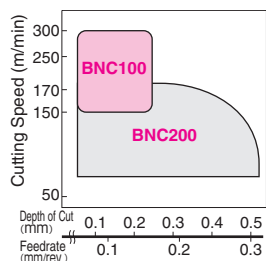
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

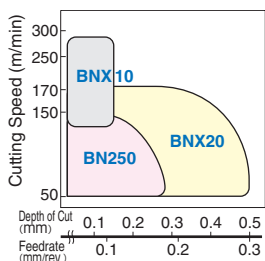
Shape	1 piece pack ISO Cat. No.	r
	DCMT 070201	0.1
	070202	0.2
	070204	0.4

SUMIBORON Application Range Map

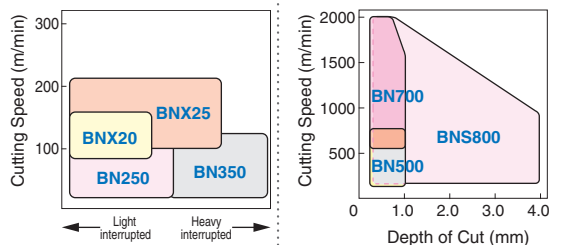
Ⓐ Continuous Cut of Hardened Steel



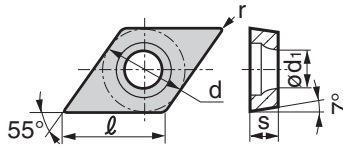
Ⓑ Interrupted Cut of Hardened Steel



Ⓒ Grey Cast Iron



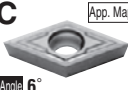
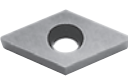
DC 55° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

DC 0902


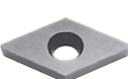
- ℓ : 9.7
- ϕd : 7.94
- s : 2.38
- $\phi d1$: 3.4

Shape	ISO Cat. No.	r
SC 	DCGT 090201N-SC 090202N-SC	0.1 0.2
Light cut 	DCGW 090200 090201	0 0.1

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○

DC 1103

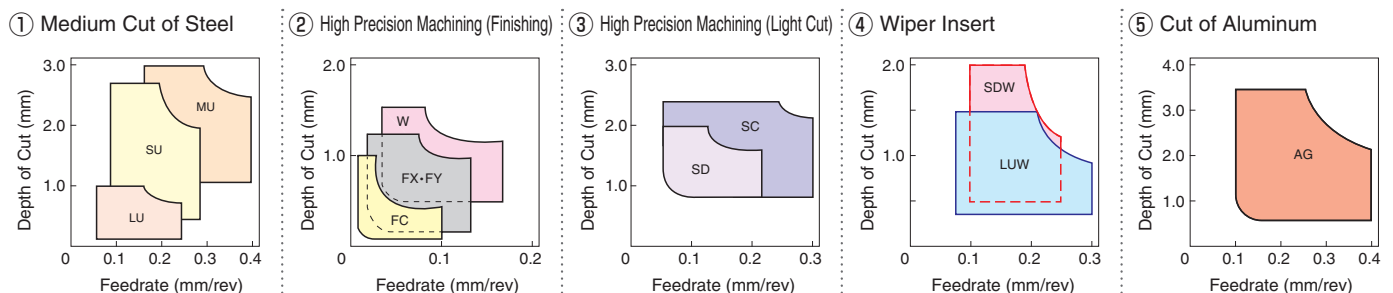
- ℓ : 11.6
- ϕd : 9.525
- s : 3.18
- $\phi d1$: 4.4

Shape	ISO Cat. No.	r
SC 	DCGT 110301N-SC 110302N-SC	0.1 0.2
Light cut 	DCGW 110300 110301	0 0.1

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic									
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○

positive inserts
C
D
R
S
T
V
W
Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE POSITIVE INSERT

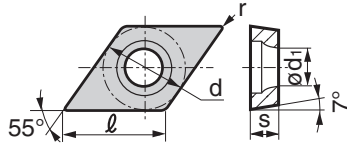
Indexable Inserts for Turning

DC

55° Diamond Type

7° Relief

With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DC 11T3

• l : 11.6

• ϕd : 9.525

• s : 3.97

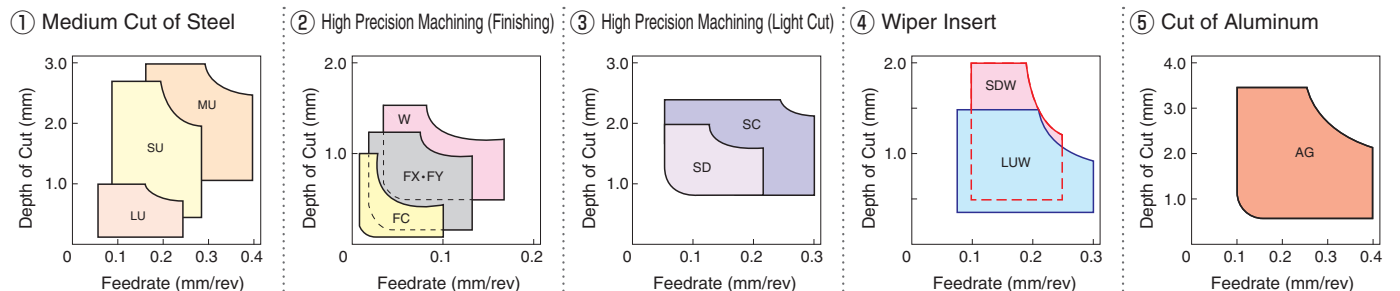
• $\phi d1$: 4.4

Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders C48 C50 C52 Boring Bars D30 D31

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
LU Rake Angle 12°	DCMT 11T302N-LU	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	11T304N-LU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T308N-LU	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FC Rake Angle 15°	DCGT 11T301N-FC	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	11T302N-FC	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T304N-FC	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FX Rake Angle 15°	DCGT 11T3003R-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	11T3003L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301R-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301L-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T302R-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T302L-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Finishing FX Rake Angle 14°	DCET 11T3003R-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	11T3003L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T3008R-FX	0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T3008L-FX	0.08	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301R-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301L-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T3018R-FX	0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T3018L-FX	0.18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
11T304R-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
11T304L-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY Rake Angle 15°	DCGT 11T3003R-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	11T3003L-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301R-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T301L-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T302R-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	11T302L-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Chipbreaker Application Range Map

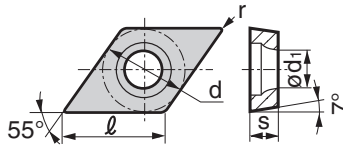


DC

55° Diamond Type

7° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DC ■ ■ ■ 11T3 ● ● ●

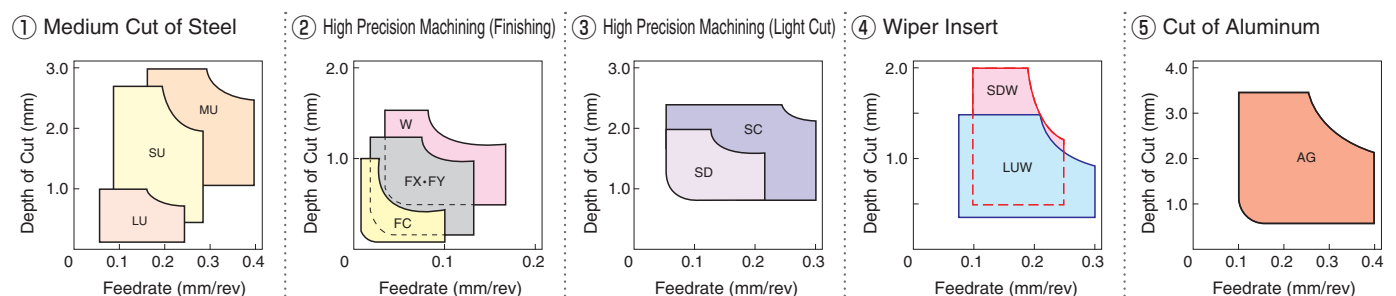
- l : 11.6 • s : 3.97
- φd : 9.525 • φd1 : 4.4

Page for Applicable Holder External Holders C48 C50 C52 Boring Bars D30 D31

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	FY		SD		SU		SC		DCMW		DCGW		MU		AG														
ISO Cat. No.	11T3003R-FY 11T3003L-FY 11T3008R-FY 11T3008L-FY 11T301R-FY 11T301L-FY 11T3018R-FY 11T3018L-FY 11T304R-FY 11T304L-FY		11T304R-SD 11T304L-SD 11T308R-SD 11T308L-SD		11T302N-SU 11T304N-SU 11T308N-SU		11T3003N-SC 11T301N-SC 11T302N-SC 11T304N-SC 11T308N-SC		11T304 11T308		11T300 11T301		11T304N-MU 11T308N-MU		11T302N-AG 11T304N-AG 11T308N-AG														
r	0.03 0.03 0.08 0.08 0.1 0.1 0.18 0.18 0.4 0.4		0.4 0.4 0.8 0.8		0.2 0.4 0.8		0.03 0.1 0.2 0.4 0.8		0.4 0.8		0 0.1		0.4 0.8		0.2 0.4 0.8														

- positive inserts
- C
 - D
 - R
 - S
 - T
 - V
 - W
 - Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

55° DIAMOND TYPE POSITIVE INSERT

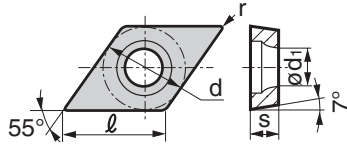
Indexable Inserts for Turning

DC

55° Diamond Type

7° Relief

With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

DC 11T3

- l : 11.6 ● s : 3.97
- ϕd : 9.525 ● $\phi d1$: 4.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C48** **C50** **C52**

Boring Bars **D30** **D31**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
	NU-DCGW 11T302 11T304 11T308	T-NU-DCGW 11T302 11T304 11T308	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	NU-DCGW 11T302F 11T304F 11T308F	T-NU-DCGW 11T302F 11T304F 11T308F	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	NU-DCGW 11T302M <i>New</i> 11T304M <i>New</i> 11T308M <i>New</i> 11T312M <i>New</i>	T-NU-DCGW 11T302M <i>New</i> 11T304M <i>New</i> 11T308M <i>New</i> 11T312M <i>New</i>	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
	2NC-DCGW 11T302 11T304 11T308		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
	NF-DCMT 11T301 11T302 11T304 11T308		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
	NU-DCMT 11T302R-DM 11T302L-DM 11T304R-DM 11T304L-DM		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

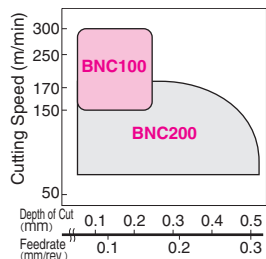
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

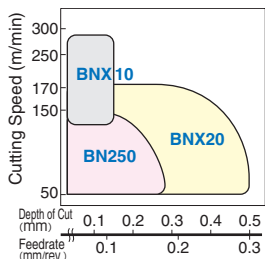
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
	DCMT 11T301 11T302 11T304		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON Application Range Map

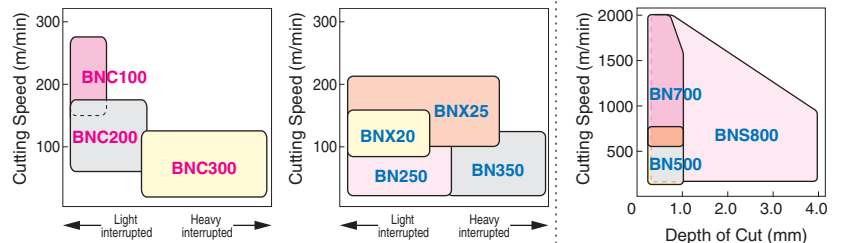
(A) Continuous Cut of Hardened Steel



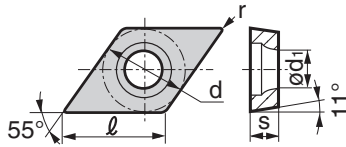
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



DP 55° Diamond Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

DP 0702

- l : 7.7 • s : 2.38
- φd : 6.35 • φd1 : 2.8

Page for Applicable Holder External Holders **C55**

Shape	ISO Cat. No.	r	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic										
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Finishing FX Rake Angle 15°	DPGT 0702003R-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
	DPGT 0702003L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
	DPGT 070201R-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
	DPGT 070201L-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
	DPGT 070202R-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
	DPGT 070202L-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Finishing FY Rake Angle 15°	DPGT 0702003R-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 0702003L-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 070201R-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 070201L-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 070202R-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 070202L-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

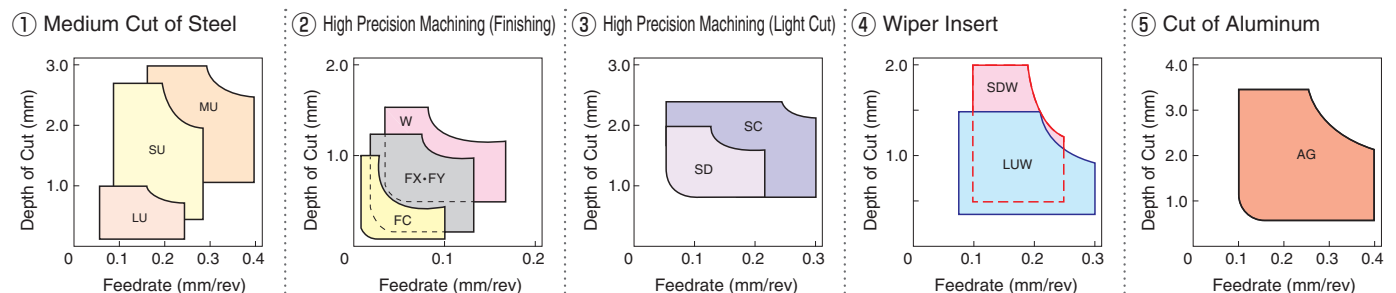
DP 11T3

- l : 11.6 • s : 3.97
- φd : 9.525 • φd1 : 4.4

Page for Applicable Holder External Holders **C55**

Shape	ISO Cat. No.	r	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic										
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Finishing FX Rake Angle 15°	DPGT 11T3003R-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T3003L-FX	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T301R-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T301L-FX	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T302R-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T302L-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Finishing FY Rake Angle 15°	DPGT 11T3003R-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T3003L-FY	0.03	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T301R-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T301L-FY	0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T302R-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
	DPGT 11T302L-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map



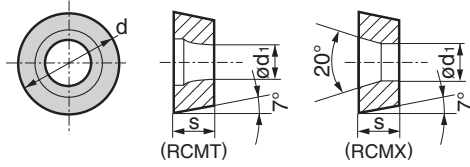
▲ mark : To be replaced by new item (Please confirm stock availability)

ROUND TYPE

POSITIVE INSERT

Indexable Inserts for Turning

RC Round Type
7° Relief
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

RC **M0**

- ϕd : 10.0~32.0
- s : 3.18~9.52 • $\phi d1$: 3.6~9.5

Page for Applicable Holder | External Holders **C27**

Condition	Coated Carbide												Coated Cermet	Cermets		Carbide									
	AC700G	AC2000	AC3000	AC900G	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	RCMT 1003M0N-RX 1204M0N-RX 1606M0N-RX 2006M0N-RX 2507M0N-RX																								
ISO Cat. No.	1003M0N-RP 1204M0N-RP 1606M0N-RP 2006M0N-RP 2507M0N-RP 3209M0N-RP																								
d	10, 12, 16, 20, 25, 32																								
S	3.18, 4.76, 6.35, 7.94, 9.52																								
d1	3.6, 4.2, 5.2, 6.5, 7.2, 9.5																								

positive inserts

C

D

R

S

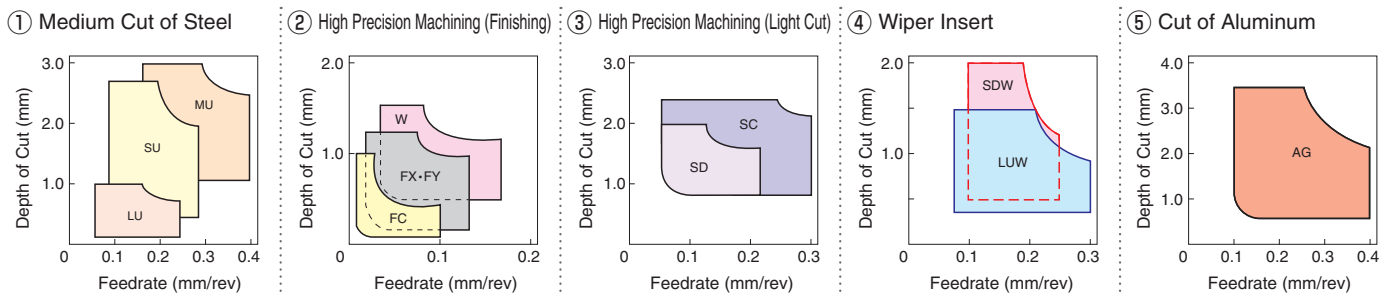
T

V

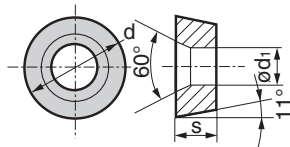
W

Solid CBN Ceramic

Chipbreaker Application Range Map



RP Round Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

RP M0

- ϕd : 8.0~24.0
- s : 3.18~6.35
- $\phi d1$: 3.3~7.3

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide													Coated Cermet	Cermet			Carbide							
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	d	S	d1
Medium cut	RPGW 0803M0	8	3.18	3.3
	1004M0	10	4.76	3.8
	1204M0	12	4.76	4.3
	1604M0	16	4.76	5.3
	2004M0	20	4.76	6.3
	2406M0	24	6.35	7.3
Rough cut RD Rake Angle 0°	RPGT 0803M0N-RD	8	3.18	3.3
	1004M0N-RD	10	4.76	3.8
	1204M0N-RD	12	4.76	4.3
	1604M0N-RD	16	4.76	5.3
	2004M0N-RD	20	4.76	6.3
	2406M0N-RD	24	6.35	7.3

RP M0

- ϕd : 8.0
- s : 3.18
- $\phi d1$: 3.3

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat.	d	S	d1
	RPGW 0803M0		8.0	3.18	3.3

● SUMIDIA

positive inserts

C

D

R

S

T

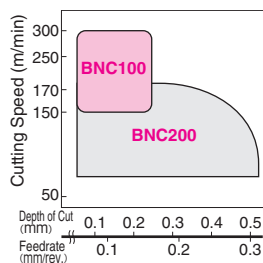
V

W

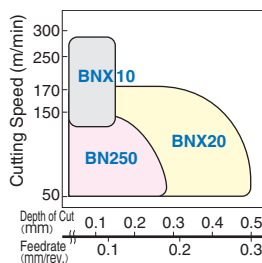
Solid CBN Ceramic

SUMIBORON Application Range Map

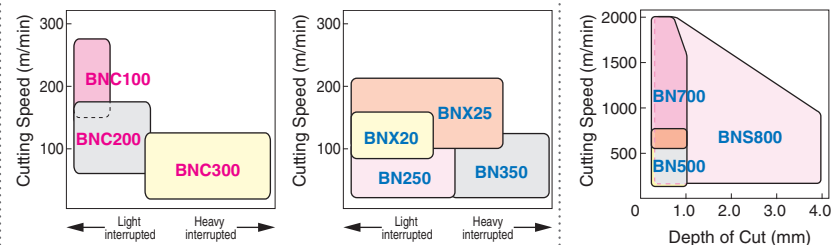
Ⓐ Continuous Cut of Hardened Steel



Ⓑ Interrupted Cut of Hardened Steel



Ⓒ Grey Cast Iron

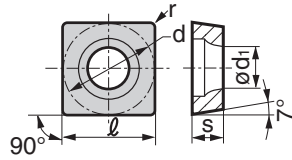


SQUARE TYPE

POSITIVE INSERT

Indexable Inserts for Turning

SC Square Type
7° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SC 0702

- l : 7.94
- s : 2.38
- phi d : 7.94
- phi d1 : 3.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **C59**

Shape	ISO Cat. No.	r
SC App. Map ③ Rake Angle 6°	SCMT 070204N-SC	0.4
SC App. Map ③ Rake Angle 6°	SCGT 070201N-SC 070202N-SC	0.1 0.2
SCGW	SCGW 070200 070201	0 0.1

SC 0702

- l : 7.94
- s : 2.38
- phi d : 7.94
- phi d1 : 3.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

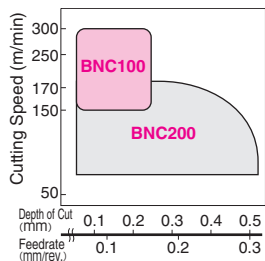
Page for Applicable Holder External Holders **C59**

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX250	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

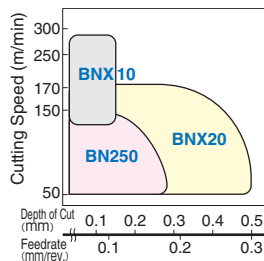
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	SCMT 070201 070202 070204		0.1 0.2 0.4

SUMIBORON Application Range Map

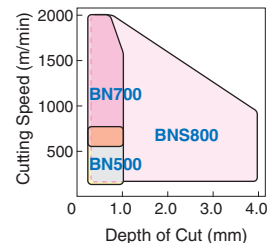
(A) Continuous Cut of Hardened Steel



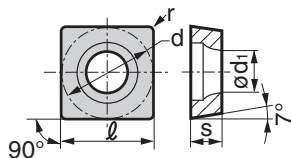
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



SC Square Type
7° Relief
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

SC 0903

• l : 9.525 • s : 3.18
• φd : 9.525 • φd1 : 4.4

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC Rake Angle 6°	SCMT 090308N-SC	0.8
SC Rake Angle 6°	SCGT 090301N-SC 090302N-SC	0.1 0.2
	SCGW 090300 090301	0 0.1

SC 09T3

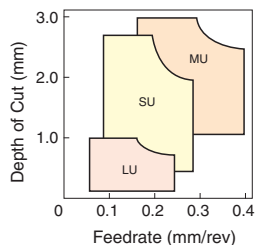
• l : 9.525 • s : 3.97
• φd : 9.525 • φd1 : 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○

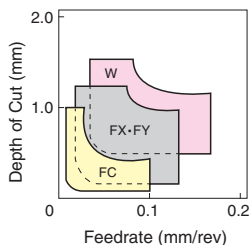
Shape	ISO Cat. No.	r
LU Rake Angle 12°	SCMT 09T304N-LU 09T308N-LU	0.4 0.8
FX Rake Angle 15° (Left-hand insert shown)	SCGT 09T302R-FX 09T302L-FX 09T304R-FX 09T304L-FX	0.2 0.2 0.4 0.4
SU Rake Angle 8°	SCMT 09T304N-SU 09T308N-SU	0.4 0.8
SC Rake Angle 6°	SCGT 09T301N-SC 09T302N-SC	0.1 0.2
	SCMW 09T308	0.8

Chipbreaker Application Range Map

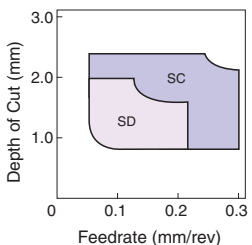
① Medium Cut of Steel



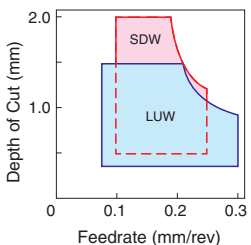
② High Precision Machining (Finishing)



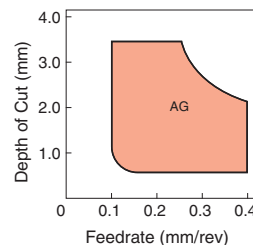
③ High Precision Machining (Light Cut)



④ Wiper Insert



⑤ Cut of Aluminum

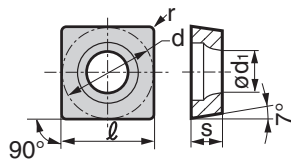


SQUARE TYPE

POSITIVE INSERT

Indexable Inserts for Turning

SC Square Type
7° Relief
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SC 09T3

- l : 9.525 • s : 3.97
- phi d : 9.525 • phi d1 : 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **C59** Boring Bars **D29**

Shape	ISO Cat. No.	r
Light cut	SCGW 09T300 09T301	0 0.1
Light-Medium cut	MU SCMT 09T308N-MU	0.8

SC 09T3

- l : 9.525 • s : 3.97
- phi d : 9.525 • phi d1 : 4.4

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **C59** Boring Bars **D29**

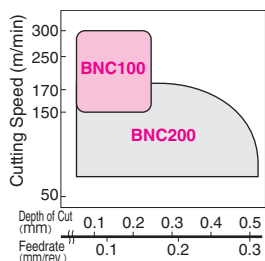
Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

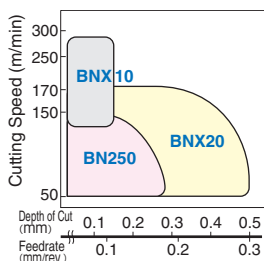
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	SCMT 09T301 09T302 09T304		0.1 0.2 0.4

SUMIBORON Application Range Map

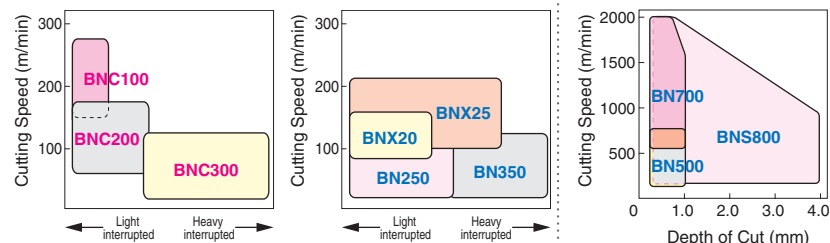
(A) Continuous Cut of Hardened Steel



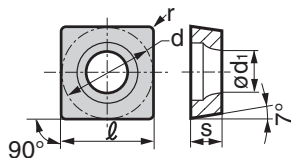
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



SC Square Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SC 1204

- l : 12.7 • s : 4.76
- ϕd : 12.7 • $\phi d1$: 5.5

Page for Applicable Holder Boring Bars **D29**

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Shape	FP	FX	SU	SC	SCMW	MU																								
ISO Cat. No.	SCMT 120404N-FP 120408N-FP	SCGT 120404R-FX 120404L-FX 120408R-FX 120408L-FX	SCMT 120404N-SU 120408N-SU	SCMT 120408N-SC	SCMW 120408 120412	SCMT 120408N-MU																								
r	0.4 0.8	0.4 0.4 0.8 0.8	0.4 0.8	0.8	0.8 1.2	0.8																								

positive inserts

C

D

R

S

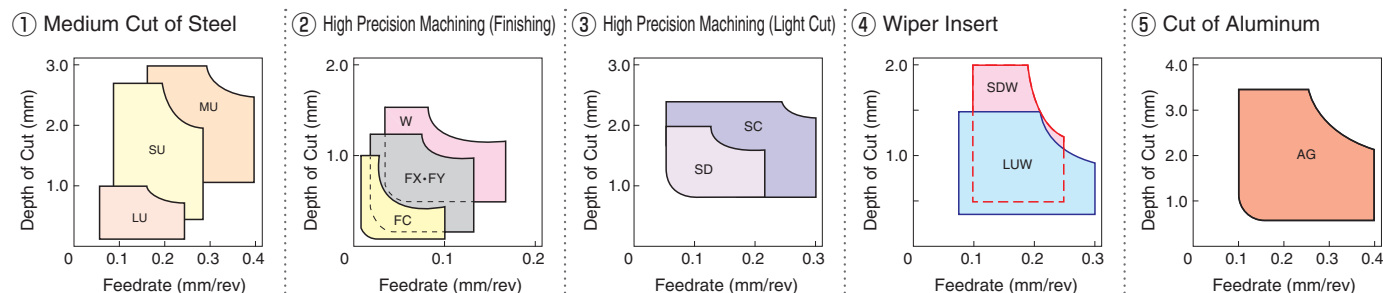
T

V

W

Solid CBN Ceramic

Chipbreaker Application Range Map



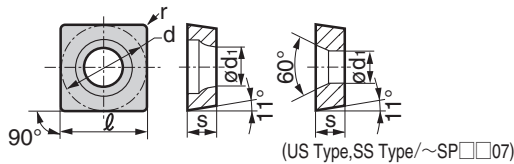
▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE

POSITIVE INSERT

Indexable Inserts for Turning

SP Square Type
11° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

SP 0602

- ℓ : 6.35
- s : 2.38
- ϕd : 6.35
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape **US** ISO Cat. No. **SPMT 060204N-US** r 0.4

Rake Angle 10°

G

D

R

SP 0702

- ℓ : 7.94
- s : 2.38
- ϕd : 7.94
- $\phi d1$: 3.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape **SS** ISO Cat. No. **SPMT 070208N-SS** r 0.8

Rake Angle 5°

T

V

SP 0703

- ℓ : 7.94
- s : 3.18
- ϕd : 7.94
- $\phi d1$: 3.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape **SD** ISO Cat. No. **SPGT 070304R-SD** r 0.4

Shape **US** ISO Cat. No. **SPMT 070308N-US** r 0.8

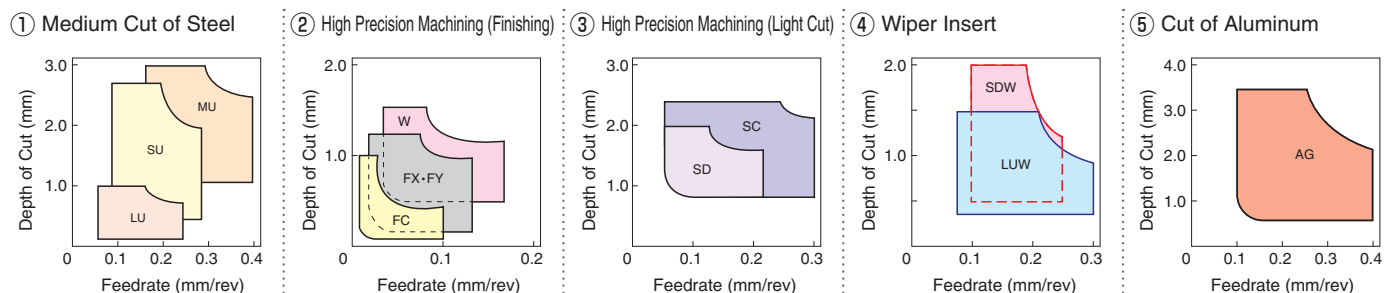
Shape **SPGW 070304** ISO Cat. No. **070308** r 0.4, 0.8

Rake Angle 0°

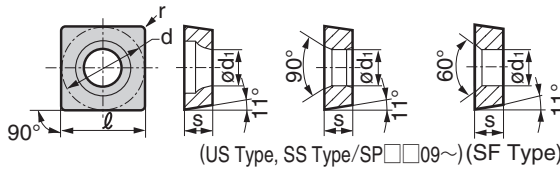
Solid CBN Ceramic

W

Chipbreaker Application Range Map



SP Square Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SP 0903

- ℓ : 9.525
- ϕd : 9.525
- s : 3.18
- $\phi d1$: 3.4*

Page for Applicable Holder Boring Bars **D28** ※4.4 for SS/US, 3.3 for SF

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Finishing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Finish~Light cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Light cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Light~Medium cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

SP 0903

- ℓ : 9.525
- ϕd : 9.525
- s : 3.18
- $\phi d1$: 3.4

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

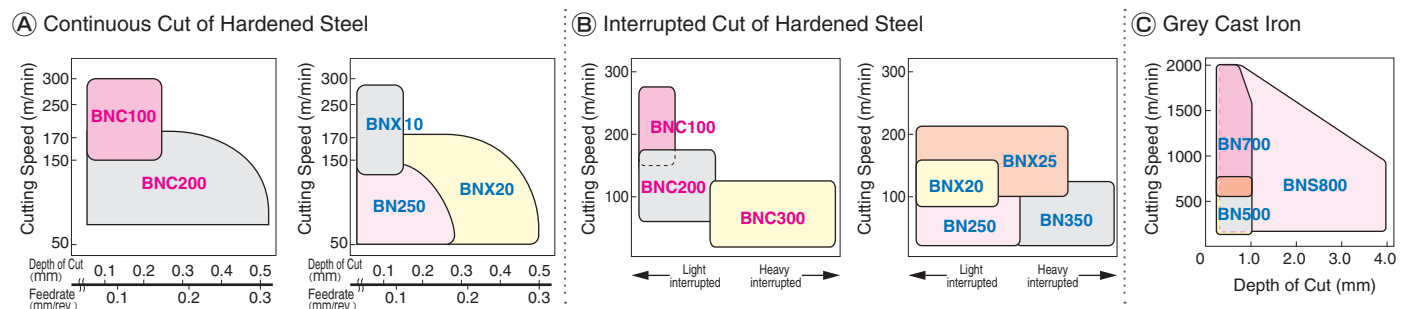
Page for Applicable Holder Boring Bars **D28**

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BN800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

Shape	1 piece pack ISO Cat. No.		10 pieces pack ISO Cat. No.		r
	1-cornered	SPGW 090302	090304	090308	

SUMIBORON Application Range Map

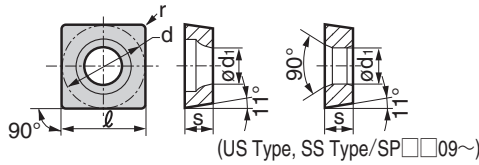


▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE POSITIVE INSERT

Indexable Inserts for Turning

SP Square Type
11° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

SP **09T3**

- l : 9.525
- s : 3.97
- ϕd : 9.525
- $\phi d1$: 4.4

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape **US** ISO Cat. No. **SPMT 09T308N-US** r 0.8

C

D

R

SP **1204**

- l : 12.7
- s : 4.76
- ϕd : 12.7
- $\phi d1$: 5.5

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape **US** ISO Cat. No. **SPMH 120408N-US** r 0.8

T

V

SP **1504**

- l : 15.875
- s : 4.76
- ϕd : 15.875
- $\phi d1$: 6.5

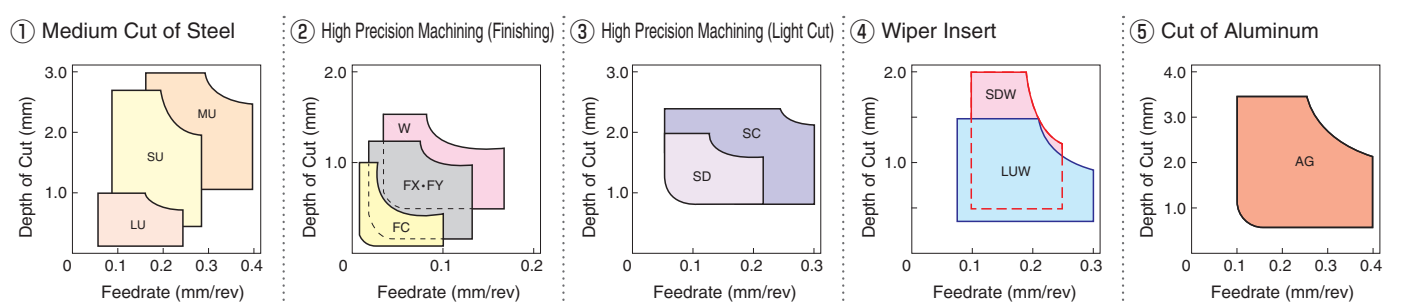
Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape **US** ISO Cat. No. **SPMH 150408N-US** r 0.8

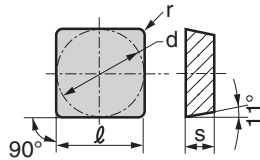
W

Solid CBN Ceramic

Chipbreaker Application Range Map



SP Square Type
11° Relief
Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SP 0702

- l : 7.94
- s : 2.38
- φ d : 7.94

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Finish	Shape	ISO Cat. No.	r
Finish-Light cut	W Rake Angle 10° (Left-hand insert shown)	SPGR 070204L-W	0.4
Light cut		SPGN 070204	0.4

SP 0903

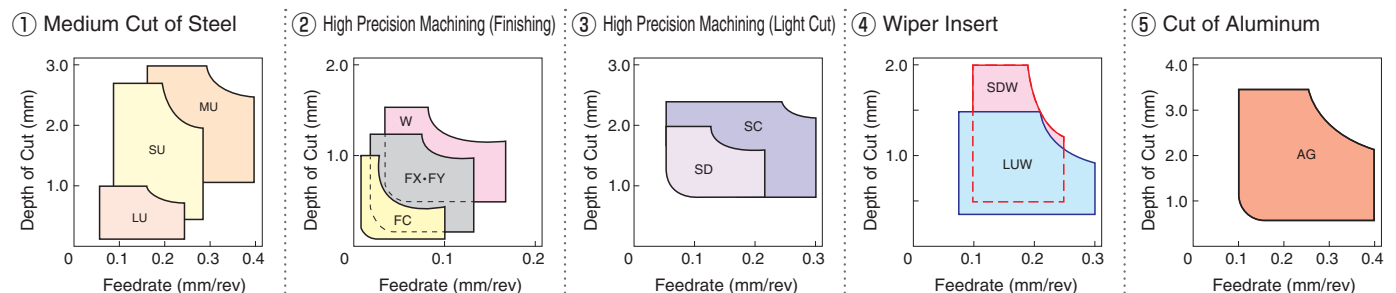
- l : 9.525
- s : 3.18
- φ d : 9.525

Page for Applicable Holder Boring Bars **D40**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic										
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Finish	Shape	ISO Cat. No.	r
Finishing	FK Rake Angle 0°	SPMR 090304N-FK	0.4
		090308N-FK	0.8
Finish-Light cut	W Rake Angle 10° (Left-hand insert shown)	SPGR 090304L-W	0.4
Light-Medium cut	SF Rake Angle 0°	SPMR 090304N-SF	0.4
		090308N-SF	0.8
Medium cut		SPMR 090304N-UJ	0.4
		090308N-UJ	0.8
Medium cut		SPMN 090304	0.4
		090308	0.8
		SPGN 090302	0.2
		090304	0.4
		090308	0.8
		090312	1.2

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE

POSITIVE INSERT

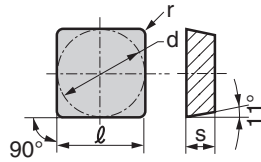
Indexable Inserts for Turning

SP

Square Type

11° Relief

Without Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- Pop Map: Reference no. of chipbreaker
- Application Range Map: Application Range Map (at the bottom of this page)
- Rate Angle: Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

SP 0903

● l : 9.525 ● s : 3.18
● ϕd : 9.525

●▲ = 1 piece pack Stacked
● = 1 piece pack and 10 pieces pack both Stacked

Page for Applicable Holder

Boring Bars **D40**

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
	NU-SPGN 090304 090308	T-NU-SPGN 090304 090308	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.8	—	—	—	—	●	●	●	●	●	●	●	●	●	—
	NU-SPGN 090304M 090308M <i>cNew</i>	T-NU-SPGN 090304M 090308M <i>cNew</i>	0.4	—	—	—	—	—	—	—	●	—	—	—	—	—	—
			0.8	—	—	—	—	—	—	—	●	—	—	—	—	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

D

R

S

SUMIBORON

Shape	SPGN 090304 090308 090312	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	—	▲	▲	—	—	—	—	—
		1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—

T

SUMIDIA (NF Type)

Shape	NF-SPGN 090304 090308	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

V

W

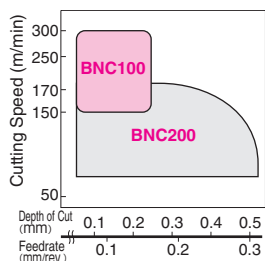
SUMIDIA

Shape	SPGN 090302 090304 090308	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●

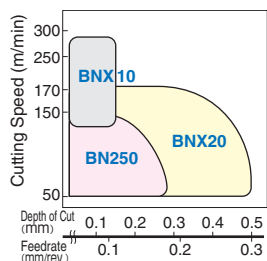
Solid CBN Ceramic

SUMIBORON Application Range Map

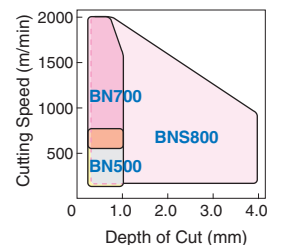
(A) Continuous Cut of Hardened Steel



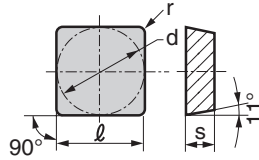
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



SP Square Type
11° Relief
Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

SP 1203

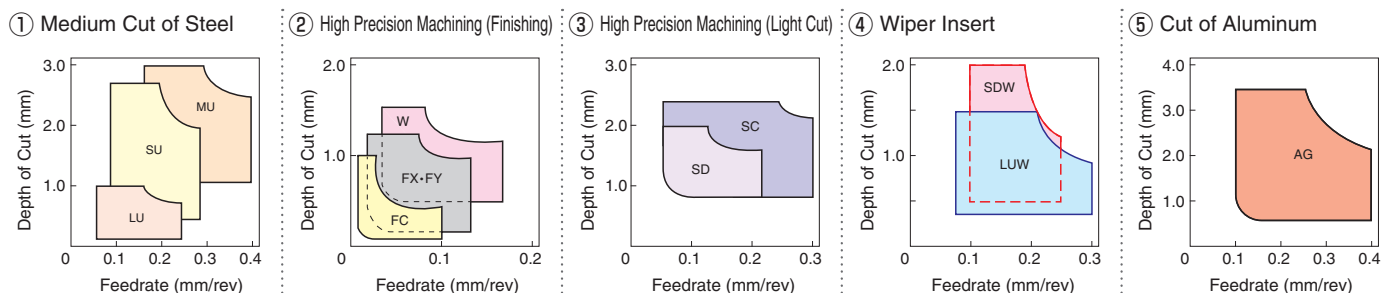
- l : 12.7 • s : 3.18
- ϕd : 12.7

Page for Applicable Holder External Holders **C29** Boring Bars **D40**

Condition	Coated Carbide													Coated Cermet	Cermets		Carbide		Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	FK		SF		UJ		SPMN		SPGN																					
ISO Cat. No.	SPMR 120304N-FK 120308N-FK		SPMR 120304N-SF 120308N-SF 120312N-SF		SPMR 120304N-UJ 120308N-UJ		SPMN 120304 120308 120312		SPGN 120304 120308 120312																					
r	0.4 0.8		0.4 0.8 1.2		0.4 0.8		0.4 0.8 1.2		0.4 0.8 1.2																					

- positive inserts
- C
 - D
 - R
 - S
 - T
 - V
 - W
 - Solid CBN Ceramic

Chipbreaker Application Range Map



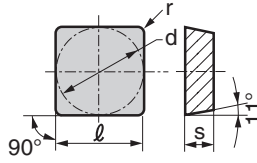
▲ mark : To be replaced by new item (Please confirm stock availability)

SQUARE TYPE

POSITIVE INSERT

Indexable Inserts for Turning

SP Square Type
11° Relief
Without Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- 3: Reference no. of chipbreaker
- 4: Application Range Map (at the bottom of this page)
- 7: Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

SP 1203

- l : 12.7
- s : 3.18
- ϕd : 12.7

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C29**

Boring Bars **D40**

Condition	Coated CBN			CBN				PCD				
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●

C

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	SPGN 120308 120312		0.8 1.2	—	—	—	—	▲	—	—	—	▲	—	—	—	—

D

● SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NF-SPGN 120304 120308	0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	●

R

S

● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	SPGN 120304 120308 120312	0.4 0.8 1.2	—	—	—	—	—	—	—	—	—	—	—	▲	●

T

V

SP 1204

- l : 12.7
- s : 4.76
- ϕd : 12.7

Condition	Coated Carbide														Coated Cermet	Cermets		Carbide		Ceramic										
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

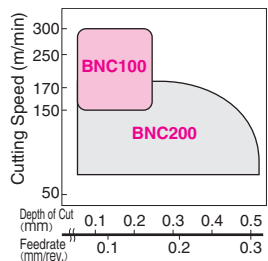
W

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Medium cut	SPGN 120408 120412 120416	0.8 1.2 1.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

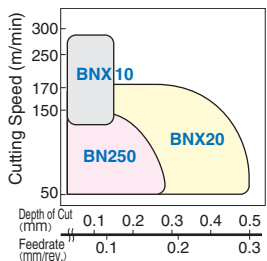
Solid CBN Ceramic

SUMIBORON Application Range Map

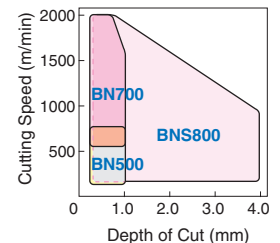
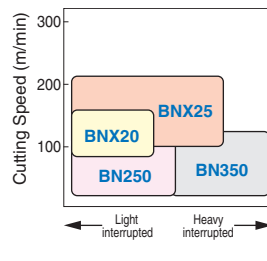
(A) Continuous Cut of Hardened Steel



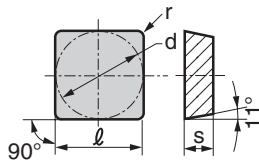
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



SP Square Type
11° Relief
Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SP 1504

- l : 15.875 • s : 4.76
- φ d : 15.875

Page for Applicable Holder External Holders **C29**

Shape	ISO Cat. No.	r	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic								
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Medium cut	SPMN 150408 150412	0.8	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium cut	SPGN 150408 150412	0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

SP 1904

- l : 19.05 • s : 4.76
- φ d : 19.05

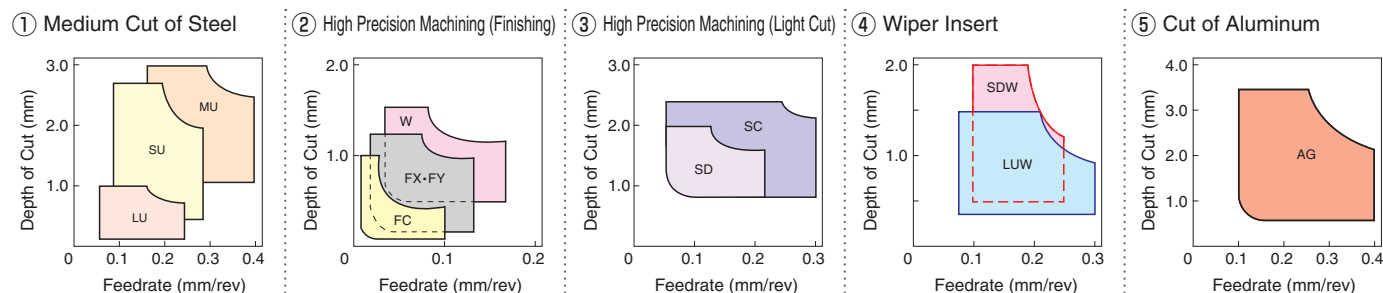
Shape	ISO Cat. No.	r	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic									
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Medium cut	SPMN 190404 190408 190412	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium cut	SPGN 190404 190408 190412 190416	0.4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		0.8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		1.2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
		1.6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

SP 2506

- l : 25.4 • s : 6.35
- φ d : 25.4

Shape	ISO Cat. No.	r	Coated Carbide													Coated Cermet	Cermets			Carbide			Ceramic								
			AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Medium cut	SPMN 250620	2.0	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

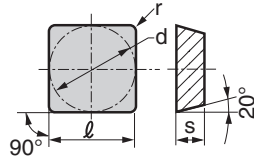
SQUARE TYPE

POSITIVE INSERT

Indexable Inserts for Turning

SE

Square Type
20° Relief
Without Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

SE 0702

- l : 7.94
- s : 2.38
- ϕd : 7.94

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○

C

Shape	ISO Cat. No.	r
Light cut	SEGN 070202	0.2
	070204	0.4
	070208	0.8

D

R

SE 0702

- l : 7.94
- s : 2.38
- ϕd : 7.94

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	○	○	○	○	○	○	○	○	○	○	○	○	○	○

S

● SUMIDIA

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	SEGN 070202		0.2
	070204		0.4
	070208		0.8

T

V

SE 0903

- l : 9.525
- s : 3.18
- ϕd : 9.525

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○

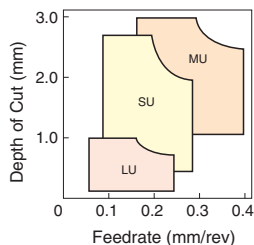
W

Shape	ISO Cat. No.	r
Light cut	SEGN 090302	0.2
	090304	0.4
	090308	0.8

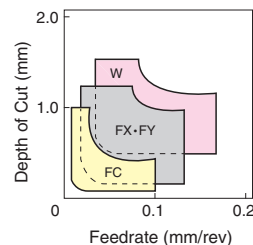
Solid CBN Ceramic

Chipbreaker Application Range Map

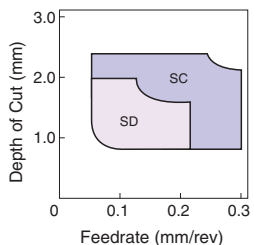
① Medium Cut of Steel



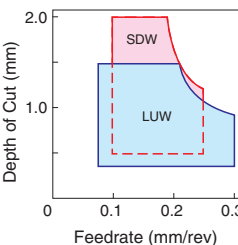
② High Precision Machining (Finishing)



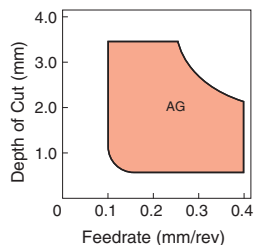
③ High Precision Machining (Light Cut)



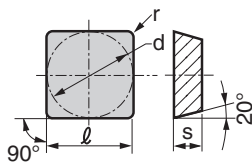
④ Wiper Insert



⑤ Cut of Aluminum



SE Square Type
20° Relief
Without Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

SE 0903

- l : 9.525 • s : 3.18
- φd : 9.525

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	SEGN 090302 090304 090308		0.2
			0.4
			0.8

SE 1203

- l : 12.7 • s : 3.18
- φd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
Light cut	SEGN 120304 120308	0.4
		0.8

SE 1203

- l : 12.7 • s : 3.18
- φd : 12.7

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

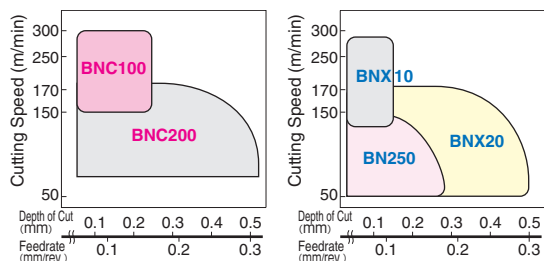
Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

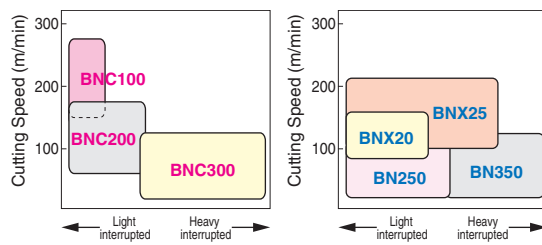
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	SEGN 120302 120304 120308		0.2
			0.4
			0.8

SUMIBORON Application Range Map

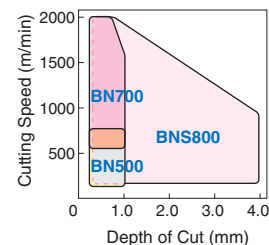
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



TRIANGULAR TYPE

POSITIVE INSERT

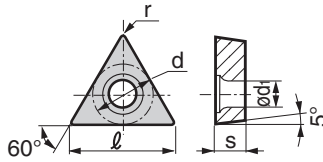
Indexable Inserts for Turning

TB

Triangular Type

5° Relief

With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

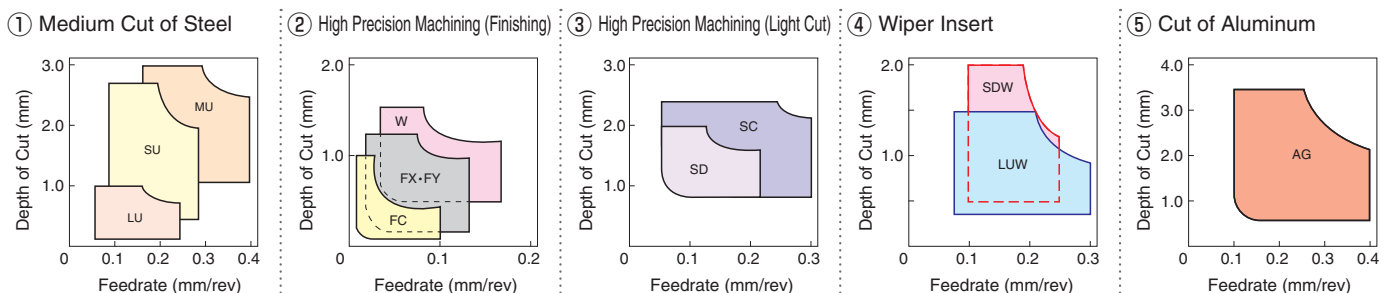
TB 0601

• l : 6.9 • s : 1.59
 • ϕd : 3.97 • $\phi d1$: 2.2

Page for Applicable Holder Boring Bars **D16** **D17**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	FW		FX		FY		W		Light cut																					
ISO Cat. No.	TBGT 060102R-FW 060102L-FW 060104R-FW 060104L-FW		TBGT 060102R-FX 060102L-FX 060104R-FX 060104L-FX		TBGT 060101R-FY 060101L-FY 060102R-FY 060102L-FY 060104R-FY 060104L-FY		TBGT 060102R-W 060102L-W 060104R-W 060104L-W		TBGW 060102 060104																					
r	0.2 0.2 0.4 0.4		0.2 0.2 0.4 0.4		0.1 0.1 0.2 0.2 0.4 0.4		0.2 0.2 0.4 0.4		0.2 0.4																					

Chipbreaker Application Range Map

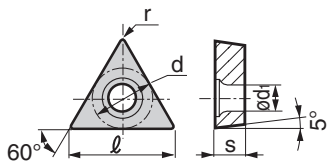


TB

Triangular Type

5° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

TB

0601

- l : 6.9 • s : 1.59
- φd : 3.97 • φd1 : 2.2

Application: P steel, M stainless steel, K cast iron, N non-ferrous metal, S exotic alloy, H hardened steel

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars D16 D17

Condition	Coated CBN			CBN					PCD				
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application													
				BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered 	NU-TBEW 060102F	T-NU-TBEW 060102F	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	NU-TBEW 060102S	T-NU-TBEW 060102S	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

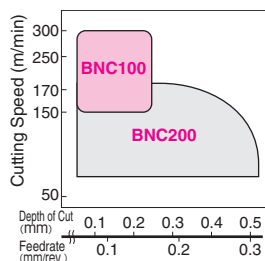
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application													
1-cornered 	NF-TBGW 060102 060104		0.2 0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

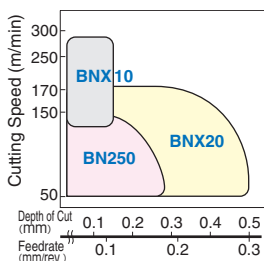
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Application													
1-cornered 	TBGW 060102 060104		0.2 0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON Application Range Map

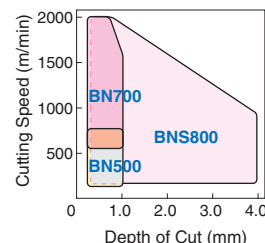
① Continuous Cut of Hardened Steel



② Interrupted Cut of Hardened Steel



③ Grey Cast Iron



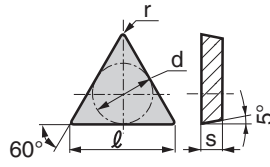
TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TB

Triangular Type
5° Relief
Without Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

TB 0601

- l : 6.9
- s : 1.59
- ϕd : 3.97

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder | Boring Bars **D48** **L52**

Shape	ISO Cat. No.	r
W Finish-Light cut Rake Angle 10° (Left-hand insert shown)	TBGR 060104L-W	0.4
Light cut	TBGN 060104	0.4

C

D

R

TB 0601

- l : 6.9
- s : 1.59
- ϕd : 3.97

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D48** **L52**

Condition	Coated CBN				CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

S

T

V

W

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
3-cornered	TBGN 060102B 060104B 060108B		0.2
			0.4
			0.8
3-cornered	TBGN 060102-BSN 060104-BSN 060108-BSN		0.2
			0.4
			0.8

● SUMIDIA (NF Type)

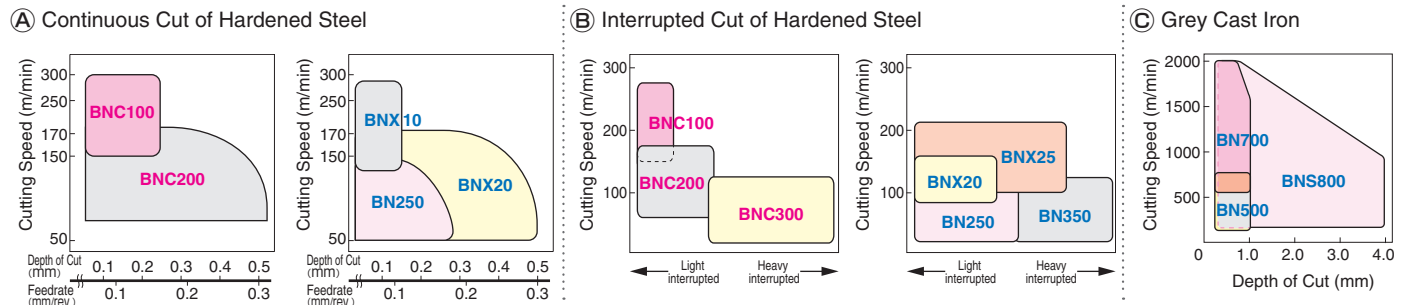
Shape	ISO Cat. No.	r
1-cornered	NF-TBGN 060102 060104	0.2 0.4

● SUMIDIA

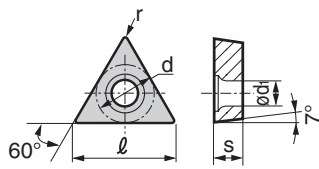
Shape	ISO Cat. No.	r
3-cornered	TBGN 060102B 060104B 060108B	0.2 0.4 0.8

Solid CBN Ceramic

SUMIBORON Application Range Map



TC Triangular Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

TC 0802

- l : 8.2
- s : 2.38
- φ d : 4.76
- φ d1 : 2.3

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic							
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC (Light cut)	TCGT 080201N-SC 080202N-SC	0.1 0.2
TCGW (Light cut)	TCGW 080200 080201	0 0.1

TC 0902

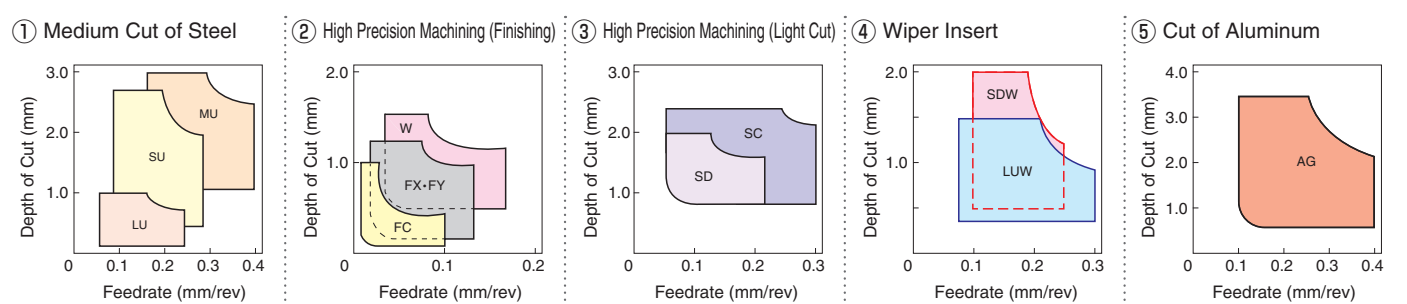
- l : 9.6
- s : 2.38
- φ d : 5.56
- φ d1 : 2.5

Condition	Coated Carbide														Coated Cermet	Cermets			Carbide			Ceramic							
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder External Holders **C60**

Shape	ISO Cat. No.	r
FX (Finishing)	TCGT 090201R-FX 090201L-FX 090202R-FX 090202L-FX	0.1 0.1 0.2 0.2
FY (Finishing)	TCGT 090201R-FY 090201L-FY 090202R-FY 090202L-FY	0.1 0.1 0.2 0.2
SC (Light cut)	TCGT 090201N-SC 090202N-SC	0.1 0.2
TCGW (Light cut)	TCGW 090200 090201	0 0.1

Chipbreaker Application Range Map



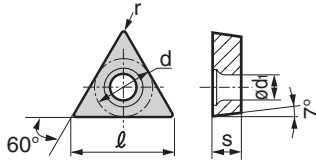
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TC Triangular Type
7° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TC 0902

- l : 9.6
- s : 2.38
- ϕd : 5.56
- $\phi d1$: 2.5

●▲ = 1 piece pack Stacked
●○ = 1 piece pack and 10 pieces pack both Stacked

Page for Applicable Holder

External Holders **C60**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NF-TCMT 090202 090204		0.2 0.4	—	—	—	—	—	—	—	—	—	—	—	—	●

SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	TCMT 090201 090202 090204	0.1 0.2 0.4	—	—	—	—	—	—	—	—	—	—	—	●	▲

TC 1102

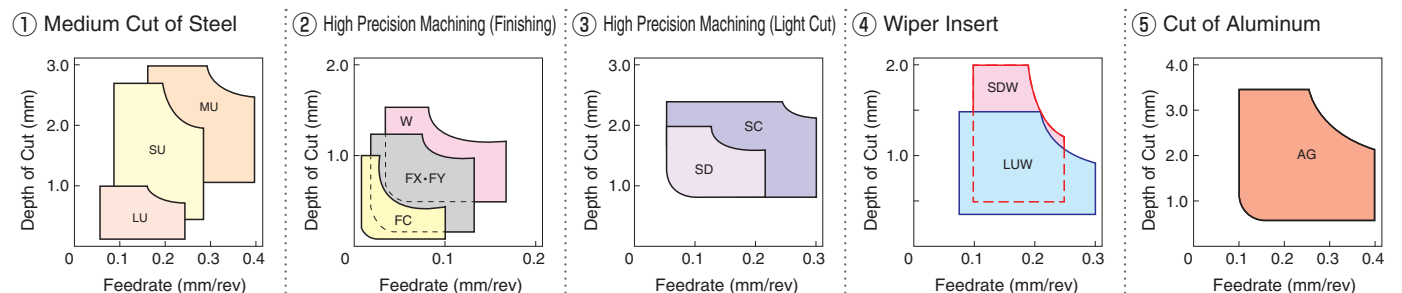
- l : 11.0
- s : 2.38
- ϕd : 6.35
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

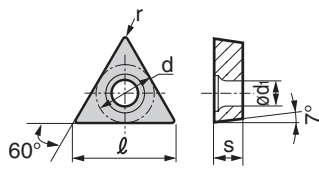
Page for Applicable Holder External Holders **C60**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
LU Rake Angle 12°	TCMT 110204N-LU 110208N-LU	0.4	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.8	●	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—
FX Rake Angle 15° (Left-hand insert shown)	TCGT 110201R-FX 110201L-FX 110202R-FX 110202L-FX	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FY Rake Angle 15° (Left-hand insert shown)	TCGT 110201R-FY 110201L-FY 110202R-FY 110202L-FY	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SU Rake Angle 8°	TCMT 110204N-SU 110208N-SU	0.4	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.8	●	●	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
SC Rake Angle 6°	TCGT 110201N-SC 110202N-SC	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Chipbreaker Application Range Map



TC Triangular Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TC 1102

- l : 11.0 • s : 2.38
- φ d : 6.35 • φ d1 : 2.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Page for Applicable Holder External Holders **C60**

Shape	ISO Cat. No.	r
	TCMW 110204 110208	0.4 0.8
	TCGW 110200 110201	0 0.1

TC 1102

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **C60**

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **C60**

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BN800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (NF Type)

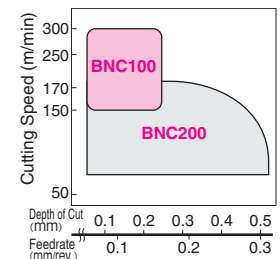
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NF-TCMT 110201 110202 110204		0.1 0.2 0.4

● SUMIDIA

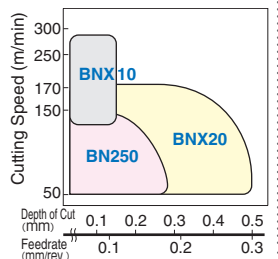
Shape	ISO Cat. No.	r
	TCMT 110201 110202 110204	0.1 0.2 0.4

SUMIBORON Application Range Map

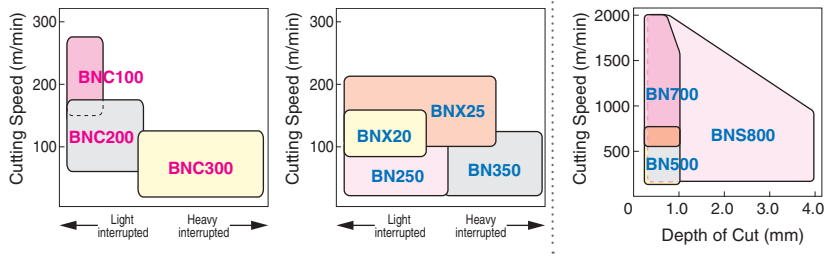
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



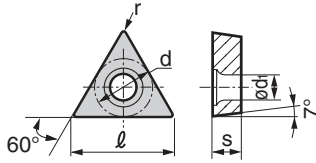
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TC Triangular Type
7° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TC 1103

- l : 11.0
- s : 3.18
- ϕd : 6.35
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
SC Rake Angle 6°	TCGT 110301N-SC 110302N-SC	0.1 0.2
TCGW	TCGW 110300 110301	0 0.1

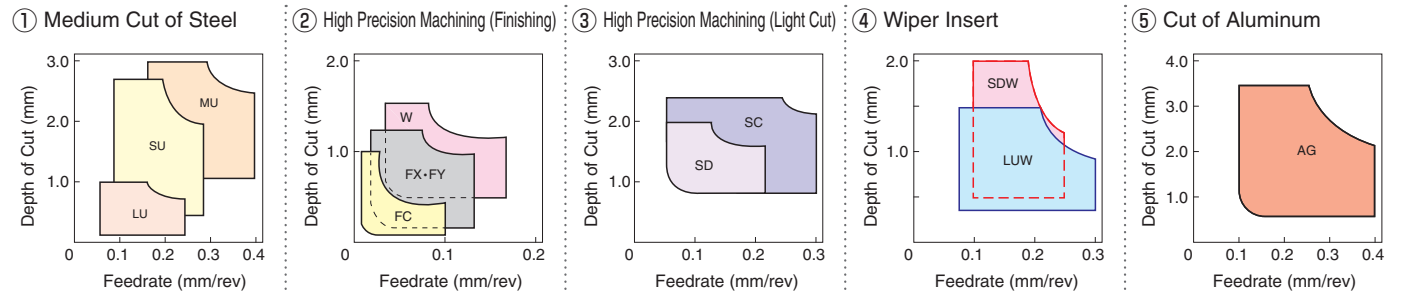
TC 16T3

- l : 16.5
- s : 3.97
- ϕd : 9.525
- $\phi d1$: 4.3

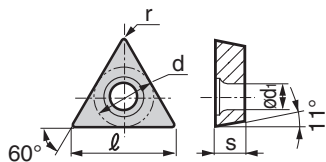
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
FP Rake Angle 10°	TCMT 16T304N-FP 16T308N-FP	0.4 0.8
SU Rake Angle 8°	TCMT 16T304N-SU 16T308N-SU	0.4 0.8
TCMW	TCMW 16T304 16T308 16T312	0.4 0.8 1.2

Chipbreaker Application Range Map



TP Triangular Type
11° Relief
With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TP 0802

• l : 8.2 • s : 2.38
• φd : 4.76 • φd1 : 2.4

Page for Applicable Holder Boring Bars **D16** **D17**

Condition	Coated										Coated Cermet	Cermets			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	LU		FW		FX		FY		W		SU																		
ISO Cat. No.	TPMT 080202N-LU 080204N-LU		TPGT 080202R-FW 080202L-FW 080204R-FW 080204L-FW		TPGT 080202R-FX 080202L-FX 080204R-FX 080204L-FX		TPGT 0802003R-FY 0802003L-FY 080201R-FY 080201L-FY 080202R-FY 080202L-FY 080204R-FY 080204L-FY		TPGT 080202R-W 080202L-W 080204R-W 080204L-W		TPMT 080202N-SU 080204N-SU		TPGW 080202 080204																
r	0.2 0.4		0.2 0.2 0.4 0.4		0.2 0.2 0.4 0.4		0.03 0.03 0.1 0.1 0.2 0.2 0.4 0.4		0.2 0.2 0.4 0.4		0.2 0.4																		

Shape

ISO Cat. No.

r

Finishing

Finish-Light cut

Light cut

positive inserts

C

D

R

S

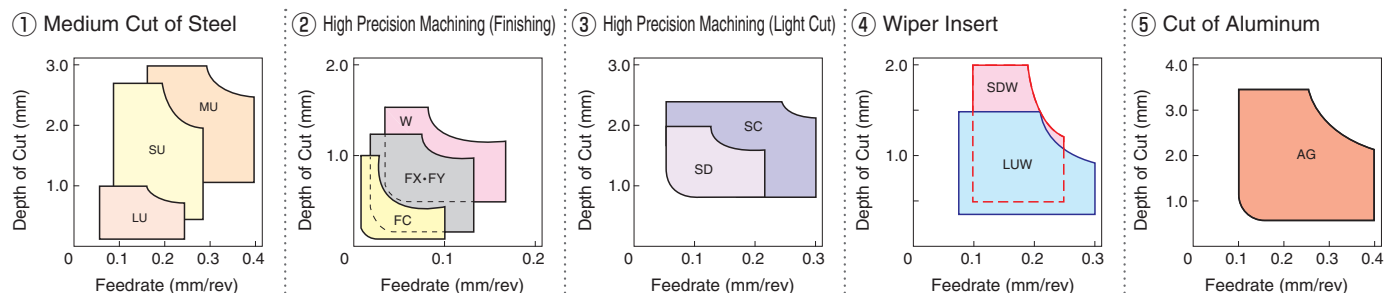
T

V

W

Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

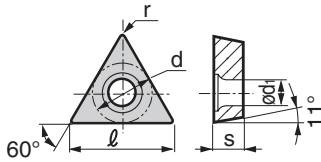
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **N** non-ferrous metal **H** hardened steel

TP 0802

- l : 8.2 • s : 2.38
- ϕd : 4.76 • $\phi d1$: 2.3

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D16** **D17**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200			
1-cornered		NU-TPGW 080202 080204 080208	● T-NU-TPGW 080202 080204 080208	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—		
				0.4	—	—	—	●	—	—	—	—	—	—	—	—	—	—	
				0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
				0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-cornered		NU-TPGW 080202F 080204F 080208F	● T-NU-TPGW 080202F 080204F 080208F	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—		
				0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
				0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
				0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-cornered		NU-TPGW 080202S 080204S 080208S	● T-NU-TPGW 080202S 080204S 080208S	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—		
				0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
				0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
				0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-cornered		NU-TPGW 080202M <i>New</i> 080204M <i>New</i> 080208M <i>New</i>	● T-NU-TPGW 080202M <i>New</i> 080204M <i>New</i> 080208M <i>New</i>	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—		
				0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
				0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
				0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		NF-TPGW 080201 080202 080204	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—

● SUMIDIA (One-use Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		DM NU-TPMT 080202R-DM 080202L-DM 080204R-DM 080204L-DM	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—

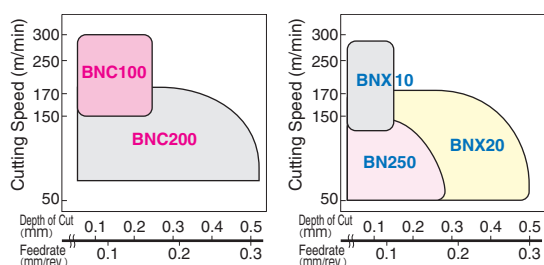
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

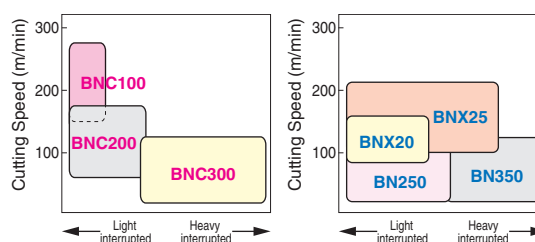
Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		TPGW 080202 080204 080208	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SUMIBORON Application Range Map

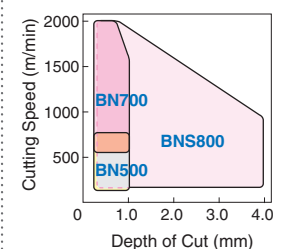
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron

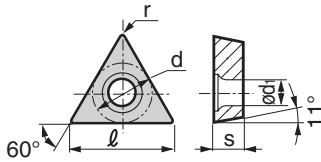


TP

Triangular Type

11° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

TP
0902

- l : 9.6
- ϕd : 5.56

- s : 2.38
- $\phi d1$: 2.8

Shape		ISO Cat. No.	r
Finishing	LU 	TPMT 090202N-LU 090204N-LU	0.2
	FX 		0.4
		TPGT 090204L-FX	0.4

Condition	Coated Carbide												Coated Cermet	Cermet			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

TP
0902

- l : 9.6
- ϕd : 5.56

- s : 2.38
- $\phi d1$: 2.8

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered		T-NU-TPGW 090202 090204 090208	0.2
			0.4
			0.8
1-cornered		T-NU-TPGW 090202M 090204M 090208M	0.2
			0.4
			0.8

Condition	Coated CBN				CBN				PCD			
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA (NF Type)

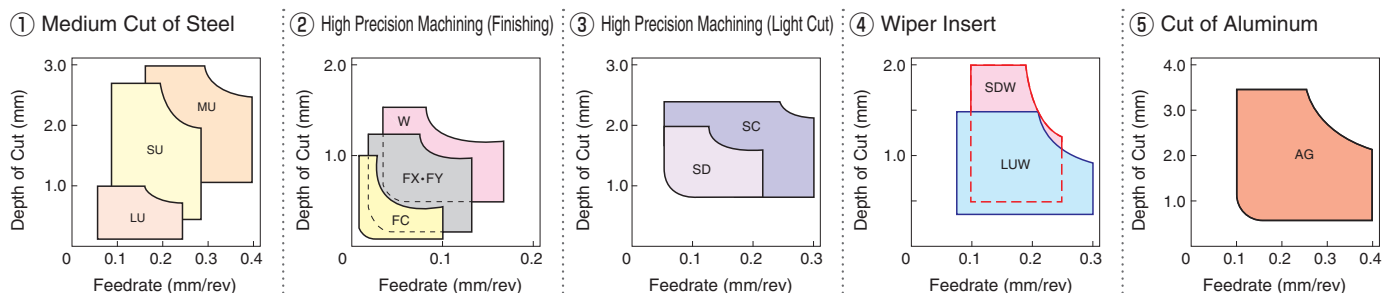
Shape	ISO Cat. No.	r	
1-cornered		NF-TPGW 090202 090204	0.2
		NF-TPGW 090202 090204	0.4

● SUMIDIA (One-use Type)

Shape	ISO Cat. No.	r	
1-cornered		NU-TPMT 090202R-DM	0.2
		090202L-DM	0.2
		090204R-DM	0.4
		090204L-DM	0.4

※Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map



TRIANGULAR TYPE

POSITIVE INSERT

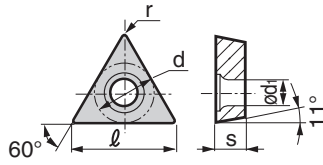
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole



Information in "Shape" column

- ➔ Name of chipbreaker
- ➔ Reference no. of chipbreaker
- ➔ Application Range Map (at the bottom of this page).
- ➔ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

TP 1102

- l : 11.0
- ϕd : 6.35

- s : 2.38
- $\phi d1$: 2.8

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic											
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
FW Rake Angle 20° (Left-hand insert shown)	TPGT 110202R-FW	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110202L-FW	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	110204R-FW	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	110204L-FW	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FX Rake Angle 15° (Left-hand insert shown)	TPGT 110202R-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110202L-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110204R-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110204L-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY Rake Angle 15° (Left-hand insert shown)	TPGT 110202R-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110202L-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110204R-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110204L-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

TP 1102

- l : 11.0
- ϕd : 6.35

- s : 2.38
- $\phi d1$: 2.8

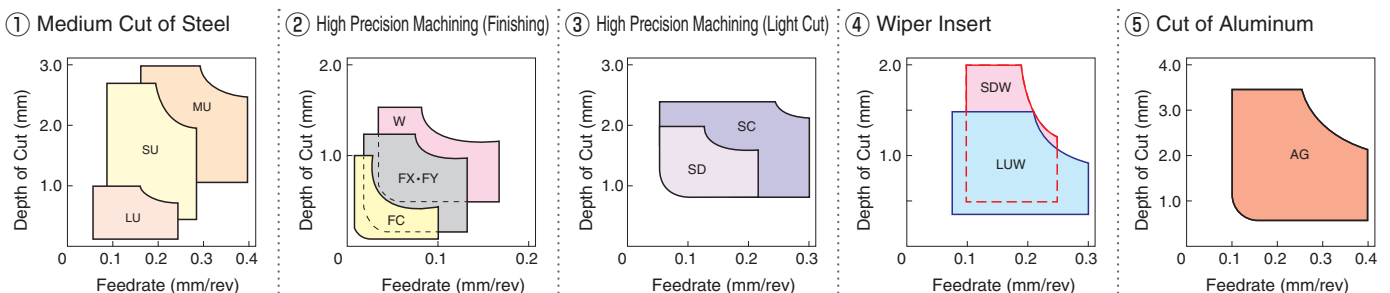
●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

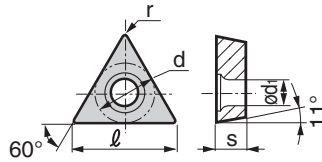
Shape	1 piece pack ISO Cat. No.		10 pieces pack ISO Cat. No.		r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN350	BN500	BN700	BNS800	DA150	DA2200
	 Small Edge Treatment Type	NU-TPGW 110202	110204	T-NU-TPGW 110202		110204	0.2	●	●	●	●	●	●	●	●	●	●	●
110208			110208		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●
					0.8	●	●	●	●	●	●	●	●	●	●	●	●	●
 General type for continuous cutting	NU-TPGW 110202M	110204M	T-NU-TPGW 110202M	110204M	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●
	110208M		110208M		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●
					0.8	●	●	●	●	●	●	●	●	●	●	●	●	●

※Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map



TP Triangular Type 11° Relief With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

TP 1102

• l : 11.0 • s : 2.38
• φd : 6.35 • φd1 : 2.8

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered	NF-TPGW 110201 110202 110204		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIDIA (One-use Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered	DM NU-TPMT 110202R-DM 110202L-DM 110204R-DM 110204L-DM	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*Depth-of-cut for one-use type is 0.5mm or less.

SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered	TPGW 110202 110204 110208	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

TP 1103

• l : 11.0 • s : 3.18
• φd : 6.35 • φd1 : 3.4

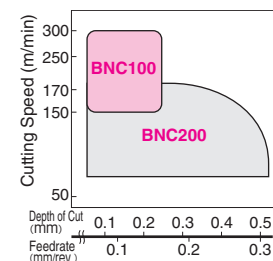
Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder Boring Bars **D16** **D17**

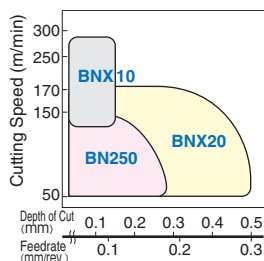
Shape	ISO Cat. No.	r
LU Bake Angle 12° App. Map ①	TPMT 110302N-LU 110304N-LU 110308N-LU	0.2
		0.4
		0.8
FX Bake Angle 15° App. Map ② (Left-hand insert shown)	TPGT 110302R-FX 110302L-FX 110304R-FX 110304L-FX 110308R-FX 110308L-FX	0.2
		0.2
		0.4
		0.4
		0.8
		0.8

SUMIBORON Application Range Map

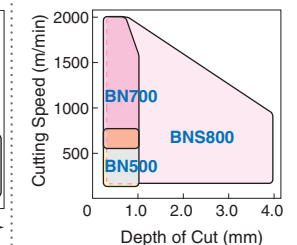
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



TRIANGULAR TYPE

POSITIVE INSERT

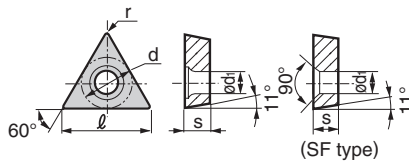
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

TP 1103

- ϕ : 11.0 • s : 3.18
- ϕ d : 6.35 • ϕ d1 : 3.4

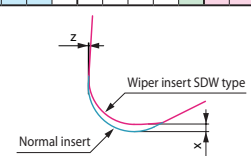
Page for Applicable Holder Boring Bars **D16** **D17**

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic															
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○

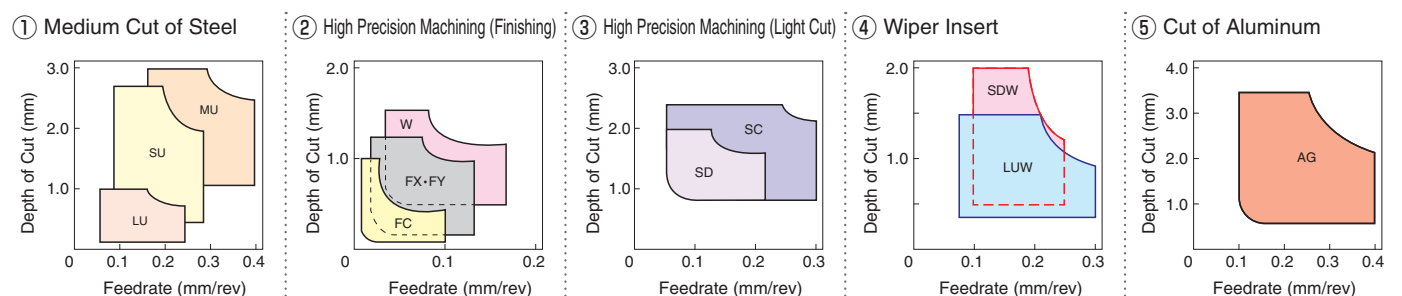
Shape	ISO Cat. No.	r
FY Rake Angle 15° (Left-hand insert shown)	TPGT 1103003R-FY <i>New</i>	0.03
	1103003L-FY <i>New</i>	0.03
	110301R-FY	0.1
	110301L-FY	0.1
	110302R-FY	0.2
	110302L-FY	0.2
	110304R-FY	0.4
	110304L-FY	0.4
	110308R-FY	0.8
110308L-FY	0.8	
SD Rake Angle 0° (Left-hand insert shown)	TPGT 110302R-SD	0.2
	110302L-SD	0.2
	110304R-SD	0.4
	110304L-SD	0.4
	110308R-SD	0.8
110308L-SD	0.8	
SDW Note 1 Rake Angle 0° (Left-hand insert shown)	TPGX 110304R-SDW	0.4
	110304L-SDW	0.4
	110308R-SDW	0.8
	110308L-SDW	0.8
SU Rake Angle 8°	TPMT 110302N-SU	0.2
	110304N-SU	0.4
	110308N-SU	0.8
TPGW 	110304	0.4
	110308	0.8
MU Rake Angle 0°	TPMT 110304N-MU	0.4
	110308N-MU	0.8
SF Rake Angle 0°	TPMH 110304N-SF	0.4
	110308N-SF	0.8

(Note) The cutting point position of the SDW type does not follow the ISO standard. When using on a boring holder with a 93° approach angle, there is a need to revise the cutting point position (refer to right table) relative to using standard inserts.

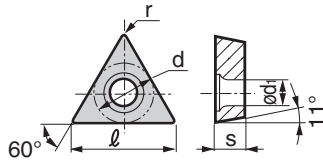
r	Compensation (mm)	
	X (Diameter change)	Z (Vertical change)
R0.4	+0.12 (Dia. +0.24)	- 0.01
R0.8	+0.15 (Dia. +0.30)	- 0.01



Chipbreaker Application Range Map



TP Triangular Type 11° Relief With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

TP 1103

• l : 11.0 • s : 3.18
• ϕd : 6.35 • $\phi d1$: 3.4

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D16** **D17**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered		NU-TPGW 110302	T-NU-TPGW 110302	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
		110304	110304	0.4	—	—	—	—	●	●	—	●	●	●	●	—	—	—
		110308	110308	0.8	—	—	—	—	●	●	—	●	●	●	●	—	—	—
		110302F	110302F	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		110304F	110304F	0.4	—	—	—	—	—	●	—	—	—	—	—	—	—	—
110308F	110308F	0.8	—	—	—	—	—	●	—	—	—	—	—	—	—	—		
	110302S	110302S	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	110304S	110304S	0.4	—	—	—	—	—	●	—	—	—	—	—	—	—	—	
	110308S	110308S	0.8	—	—	—	—	—	●	—	—	—	—	—	—	—	—	
	110302M	110302M	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	110304M	110304M	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	110308M	110308M	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

※Depth-of-cut for one-use type is 0.5mm or less.

● Coated SUMIBORON (One-use Type)

Shape	3NC-TPGW ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
3-cornered	110302 110304 110308	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.4	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—
		0.8	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—

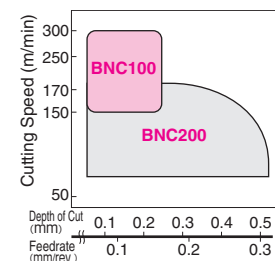
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIBORON

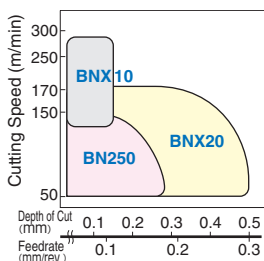
Shape	TPGW ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	110304 110308	0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SUMIBORON Application Range Map

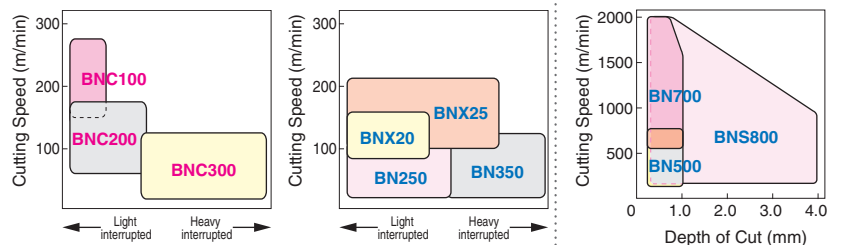
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

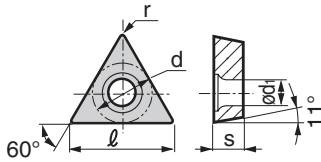
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

TP

1103

●●

●▲ = 1 piece pack Stocked
 ●○ = 1 piece pack and 10 pieces pack both Stocked

● l : 11.0 ● s : 3.18
 ● ϕd : 6.35 ● $\phi d1$: 3.4

Page for Applicable Holder

Boring Bars **D16** **D17**

Condition	Coated CBN			CBN						PCD			
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

C

SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered	 NF-TPMT 110301 110302 110304 110308		0.1	—	—	—	—	—	—	—	—	—	—	—	—	—		
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-cornered	 NF-TPGW 110301 110302 110304 110308		0.1	—	—	—	—	—	—	—	—	—	—	—	—	—		
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

D

R

S

SUMIDIA (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered	 DM <small>Rake Angle 0° (Left-hand insert shown)</small> NU-TPMT 110302R-DM 110302L-DM 110304R-DM 110304L-DM		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—		
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*Depth-of-cut for one-use type is 0.5mm or less.

T

V

SUMIDIA

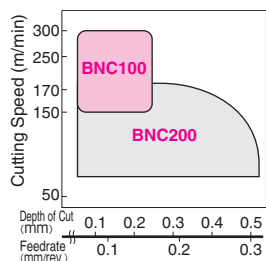
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered	 TPMT 110300 110302 110304 110308		0.05	—	—	—	—	—	—	—	—	—	—	—	—	▲		
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲
1-cornered	 TPGW 110300 110302 110304 110308		0.05	—	—	—	—	—	—	—	—	—	—	—	—	●		
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	●	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●

W

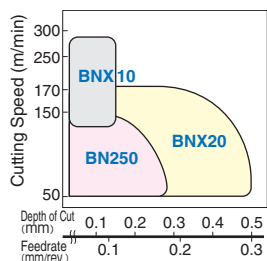
Solid CBN Ceramic

SUMIBORON Application Range Map

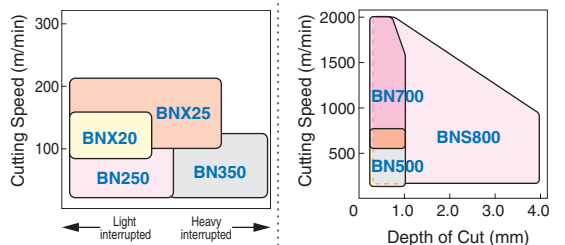
(A) Continuous Cut of Hardened Steel



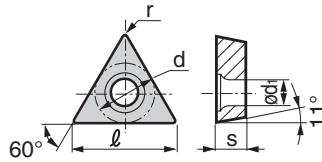
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



TP Triangular Type 11° Relief With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TP 1603

- l : 16.5
- s : 3.18
- ϕd : 9.525
- $\phi d1$: 4.4

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered	 General type for continuous cutting	NU-TPGW 160302 160304 160308	T-NU-TPGW 160302 160304 160308	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	
		NU-TPGW 160302M 160304M 160308M	T-NU-TPGW 160302M 160304M 160308M	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		NU-TPGW 160302M 160304M 160308M	T-NU-TPGW 160302M 160304M 160308M	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered	 NF-TPGW 160302 160304 160308	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*Depth-of-cut for one-use type is 0.5mm or less.

TP 1604

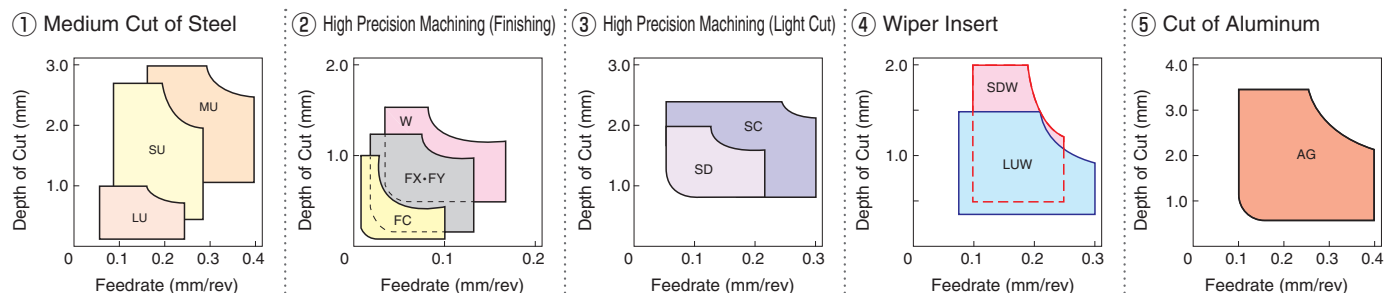
- l : 16.5
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 4.4

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder Boring Bars **D16** **D17**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Finishing FK Bake Angle 0°	TPMT 160404N-FK 160408N-FK	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Finish~Light cut SD Bake Angle 0° (Left-hand insert shown) App. Map ③	TPGT 160402R-SD 160402L-SD 160404R-SD 160404L-SD 160408R-SD 160408L-SD	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Light cut SU Bake Angle 8° App. Map ①	TPMT 160404N-SU 160408N-SU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Light cut TPGW	TPGW 160404	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Chipbreaker Application Range Map



TRIANGULAR TYPE

POSITIVE INSERT

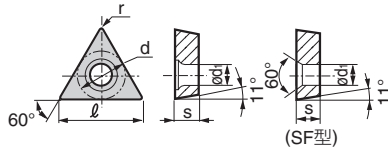
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole



Information in "Shape" column

- ➔ Name of chipbreaker
- ➔ Reference no. of chipbreaker
- ➔ Application Range Map (at the bottom of this page).
- ➔ Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

TP 1604

- l : 16.5 • s : 4.76
- ϕd : 9.525 • $\phi d1$: 4.4

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder | Boring Bars **D16** **D17**

Shape	ISO Cat. No.	r
MU	TPMT 160404N-MU 160408N-MU	0.4 0.8
SF	TPMT 160404N-SF 160408N-SF	0.4 0.8

TP 1604

- l : 16.5 • s : 4.76
- ϕd : 9.525 • $\phi d1$: 4.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D16** **D17**

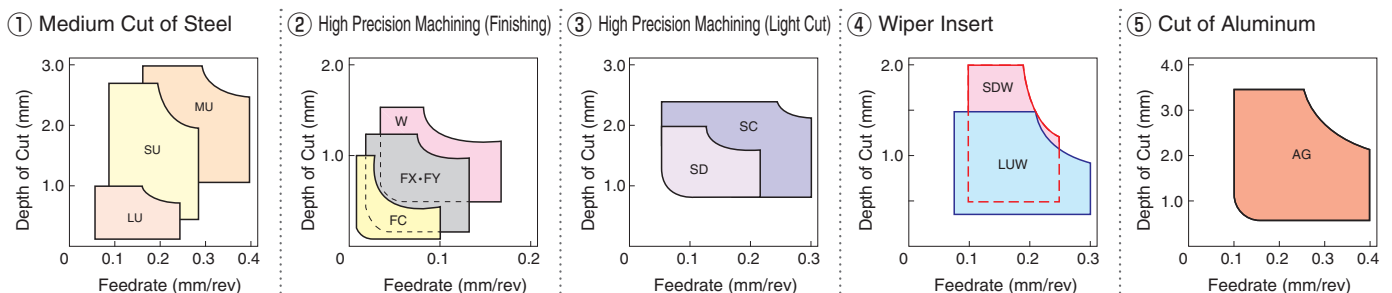
Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

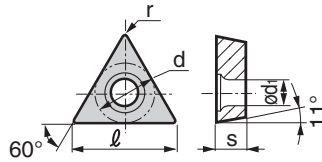
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-TPGW 160402 160404 160408	T-NU-TPGW 160402 160404 160408	0.2 0.4 0.8
	NS-TPGW 160402 160404 160408	T-NS-TPGW 160402 160404 160408	0.2 0.4 0.8
	NU-TPGW 160402F 160404F 160408F	T-NU-TPGW 160402F 160404F 160408F	0.2 0.4 0.8
	NU-TPGW 160402S 160404S 160408S	T-NU-TPGW 160402S 160404S 160408S	0.2 0.4 0.8
	NU-TPGW 160404M <i>New</i> 160408M <i>New</i> 160412M <i>New</i>	T-NU-TPGW 160404M <i>New</i> 160408M <i>New</i> 160412M <i>New</i>	0.4 0.8 1.2

*Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map



TP Triangular Type 11° Relief With Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

TP 1604

• l : 16.5 • s : 4.76
• ϕd : 9.525 • $\phi d1$: 4.4

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D16** **D17**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● Coated SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
3-cornered		3NC-TPGW 160402 160404 160408	0.2															
			0.4	●	●													
			0.8	●	●													

※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIBORON

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200	
1-cornered		TPGW 160404 160408 160412	0.4															
			0.8						●	▲	▲							
			1.2						●	▲	▲							

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		NF-TPGW 160401 160402 160404 160408	0.1																
			0.2																
			0.4																
			0.8																

● SUMIDIA (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		DM NU-TPMT 160402R-DM 160402L-DM 160404R-DM 160404L-DM 160408R-DM 160408L-DM	0.2																
			0.2																
			0.4																
			0.4																

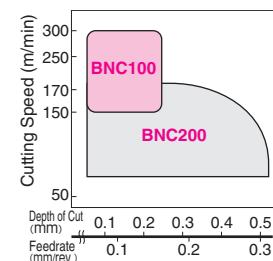
※Depth-of-cut for one-use type is 0.5mm or less.

● SUMIDIA

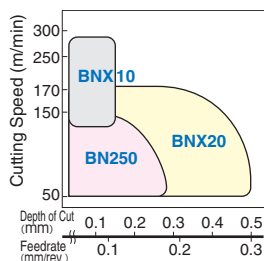
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		TPGW 160402 160404 160408 160412	0.2																
			0.4																
			0.8																
			1.2																

SUMIBORON Application Range Map

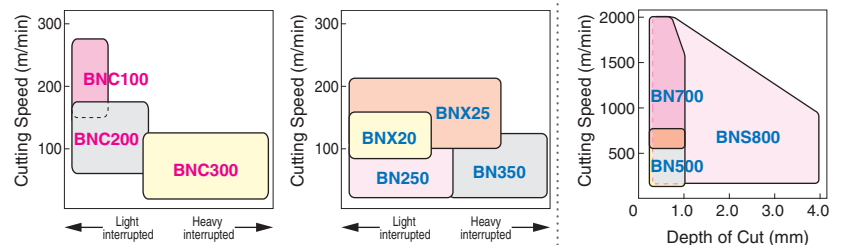
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



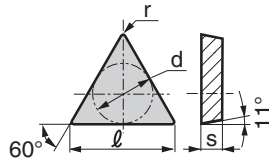
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP Triangular Type
11° Relief
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TP 0902

- ℓ : 9.6
- s : 2.38
- ϕd : 5.56

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
Finishing FK Rake Angle 0°	TPMR 090204N-FK	0.4
Finish-Light cut W Rake Angle 10° (Left-hand insert shown)	TPGR 090204L-W 090208L-W	0.4 0.8
Light cut	TPGN 090204 090208	0.4 0.8

TP 0902

- ℓ : 9.6
- s : 2.38
- ϕd : 5.56

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	TPGN 090204 090208		0.4 0.8

SUMIDIA (NF Type)

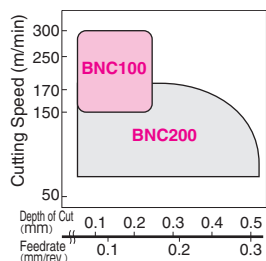
Shape	ISO Cat. No.	r
1-cornered	NF-TPGN 090202 090204	0.2 0.4

SUMIDIA

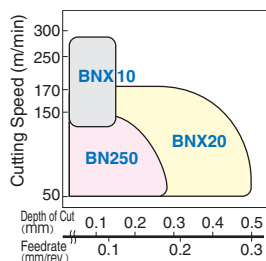
Shape	ISO Cat. No.	r
1-cornered	TPGN 090202 090204 090208	0.2 0.4 0.8

SUMIBORON Application Range Map

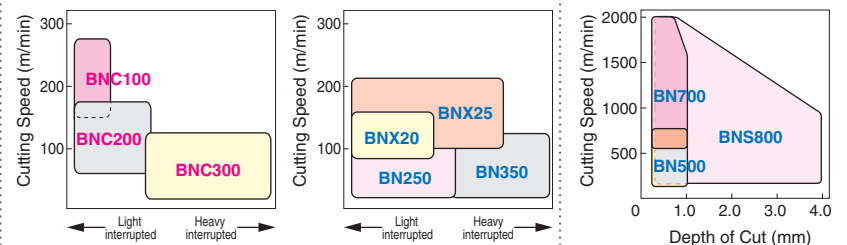
(A) Continuous Cut of Hardened Steel



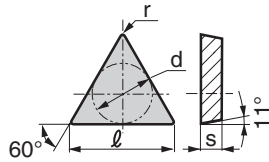
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



TP Triangular Type
11° Relief
Without Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

TP 1103

• ℓ : 11.0 • s : 3.18
• ϕd : 6.35

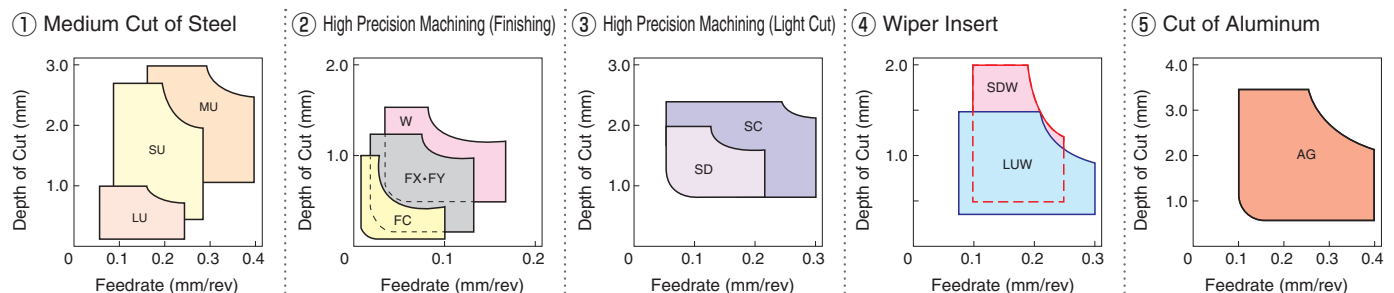
Page for Applicable Holder Boring Bars **D38**

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	○	○	○	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Shape	FK			W			SF			UJ			Medium cut			Medium cut														
ISO Cat. No.	TPMR 110302N-FK 110304N-FK 110308N-FK			TPGR 110304R-W 110304L-W 110308L-W			TPMR 110304N-SF 110308N-SF			TPMR 110304N-UJ 110308N-UJ			TPMN 110304 110308			TPGN 110302 110304 110308 110312														
r	0.2 0.4 0.8			0.4 0.4 0.8			0.4 0.8			0.4 0.8			0.4 0.8																	

positive inserts
C
D
R
S
T
V
W
Solid CBN Ceramic

Chipbreaker Application Range Map



▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

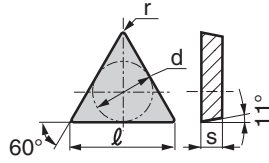
Indexable Inserts for Turning

TP

Triangular Type

11° Relief

Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application **P** steel **M** stainless steel **K** cast iron **N** non-ferrous metal **S** exotic alloy **H** hardened steel

positive inserts

TP 1103

- l : 11.0 • s : 3.18
- ϕd : 6.35

- ▲ = 1 piece pack Stocked
- ○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

Boring Bars **D38**

Condition	Coated CBN			CBN						PCD				
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

● SUMIBORON (One-use Type)

	Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cormered		NU-TPGN 110302 110304 110308	T-NU-TPGN 110302 110304 110308	0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		NU-TPGN 110302M <i>New</i> 110304M <i>New</i> 110308M <i>New</i>	T-NU-TPGN 110302M <i>New</i> 110304M <i>New</i> 110308M <i>New</i>	0.2 0.4 0.8	—	—	—	—	●	●	●	●	●	●	●	●	—	—
	 <small>General type for continuous cutting</small>					—	—	—	—	●	●	●	●	●	●	●	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

D

R

S

● SUMIBORON

1-cormered		TPGN 110304 110308		0.4 0.8	—	—	—	—	—	●	▲	—	—	●	—	—	—	—
------------	--	------------------------------	--	------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---

T

● SUMIDIA (NF Type)

1-cormered		NF-TPGN 110302 110304 110308		0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	●
		NF-TPGN 110304P 110308P		0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	●

V

W

● SUMIDIA (One-use Type)

1-cormered	 <small>Rake Angle 0° (Left-hand insert shown)</small>	DM	NU-TPMR 110302R-DM 110302L-DM 110304R-DM 110304L-DM	0.2 0.2 0.4 0.4	—	—	—	—	—	—	—	—	—	—	—	—	●	—
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※Depth-of-cut for one-use type is 0.5mm or less.

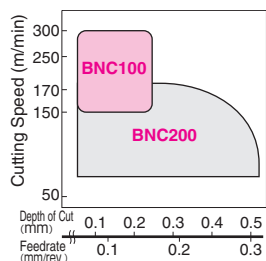
Solid CBN Ceramic

● SUMIDIA

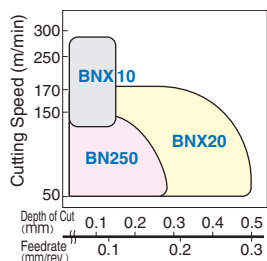
1-cormered		TPGN 110300 110302 110304 110308		0.05 0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	●
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SUMIBORON Application Range Map

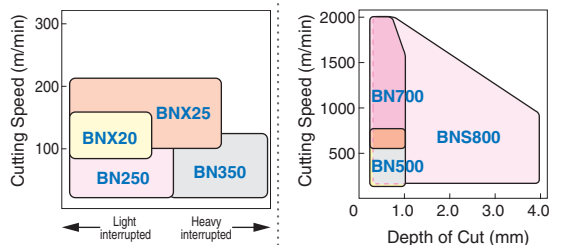
(A) Continuous Cut of Hardened Steel



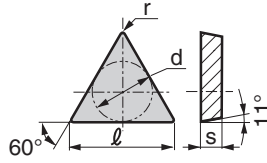
(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron



TP Triangular Type
11° Relief
Without Insert Hole



Grade Selection >>> A2

Grade/Chipbreaker Selection >>> B4

Chipbreaker Selection >>> B10

TP 1603

• ℓ : 16.5 • s : 3.18
• ϕ d : 9.525

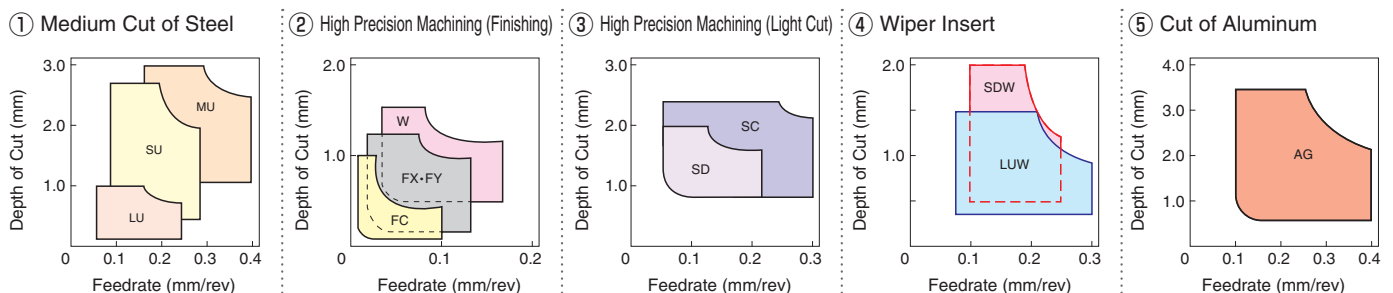
Page for Applicable Holder External Holders **C30** Boring Bars **D38**

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic															
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C			
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Shape	FK		W		SF		UJ		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut		Medium cut			
ISO Cat. No.	TPMR 160304N-FK 160308N-FK 160312N-FK		TPGR 160304R-W 160304L-W 160308L-W		TPMR 160304N-SF 160308N-SF 160312N-SF		TPMR 160304N-UJ 160308N-UJ		TPMN 160304 160308 160312		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316		TPGN 160302 160304 160308 160312 160316			
r	0.4	0.8	1.2	0.4	0.4	0.8	0.4	0.8	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2	0.4	0.8	1.2

positive inserts
C
D
R
S
T
V
W
Solid CBN Ceramic

Chipbreaker Application Range Map



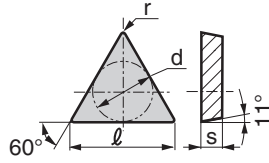
▲ mark : To be replaced by new item (Please confirm stock availability)

TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP Triangular Type
11° Relief
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TP 1603

- l : 16.5 • s : 3.18
- ϕd : 9.525

- ▲ = 1 piece pack Stocked
- ○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder

External Holders **C30**

Boring Bars **D38**

Condition	Coated CBN			CBN						PCD				
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	NU-TPGN 160302 160304 160308	T-NU-TPGN 160302 160304 160308	0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-cornered	NU-TPGN 160302M <i>New</i> 160304M <i>New</i> 160308M <i>New</i>	T-NU-TPGN 160302M <i>New</i> 160304M <i>New</i> 160308M <i>New</i>	0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON

1-cornered	TPGN 160304 160308 160312		0.4 0.8 1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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SUMIDIA (NF Type)

1-cornered	NF-TPGN 160302 160304 160308		0.2 0.4 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Full-edge	NF-TPGN 160304P		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SUMIDIA (One-use Type)

1-cornered	DM Rake Angle 0° (Left-hand insert shown)	NU-TPMR 160302R-DM 160302L-DM 160304R-DM 160304L-DM	0.2 0.2 0.4 0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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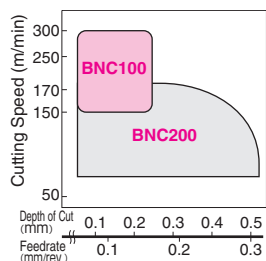
※Depth-of-cut for one-use type is 0.5mm or less.

SUMIDIA

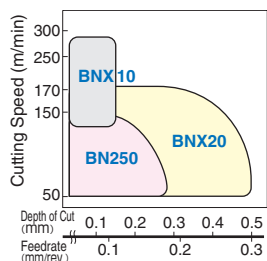
1-cornered	TPGN 160302 160304 160308 160312		0.2 0.4 0.8 1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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SUMIBORON Application Range Map

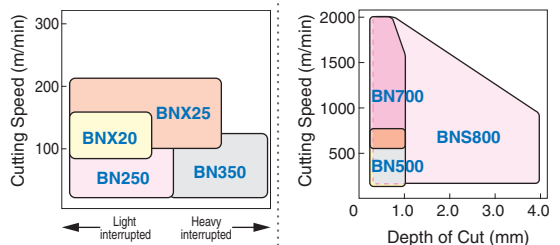
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron

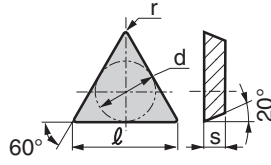


TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TE Triangular Type
20° Relief
Without Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rate angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

TE 1102

- ℓ : 11.0
- s : 2.38
- ϕd : 6.35

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
Light cut	TEGN 110202 110204 110208	0.2 0.4 0.8

TE 1102

- ℓ : 11.0
- s : 2.38
- ϕd : 6.35

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	NF-TEGN 110202 110204		0.2 0.4

● SUMIDIA

Shape	ISO Cat. No.	r
1-cornered	TEGN 110202 110204 110208	0.2 0.4 0.8

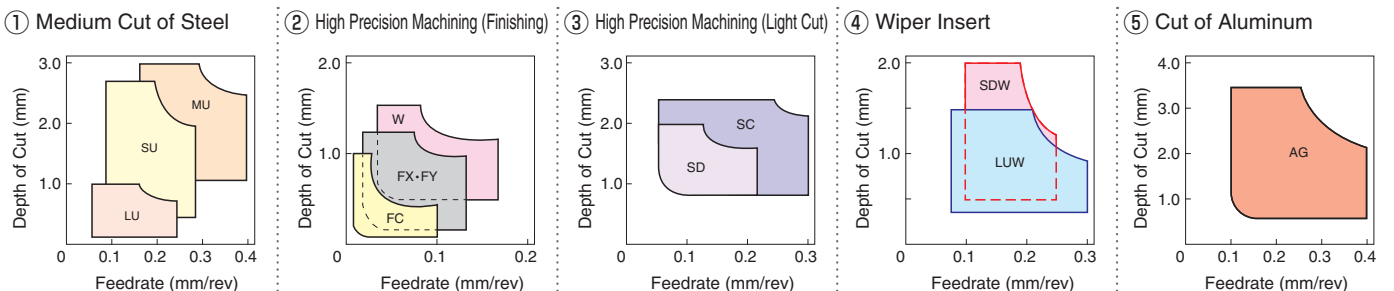
TE 1103

- ℓ : 11.0
- s : 3.18
- ϕd : 6.35

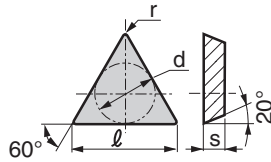
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Shape	ISO Cat. No.	r
Light cut	TEGN 110302 110304 110308	0.2 0.4 0.8

Chipbreaker Application Range Map



TE Triangular Type
20° Relief
Without Insert Hole



Grade Selection >>> A2
Grade/Chipbreaker Selection >>> B4
Chipbreaker Selection >>> B10

TE 1103

• l : 11.0 • s : 3.18
• ϕd : 6.35

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered	NF-TEGN 110302 110304 110308		0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Full-edge	NF-TEGN 110304P 110308P		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered	TEGN 110302 110304 110308	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TE 1603

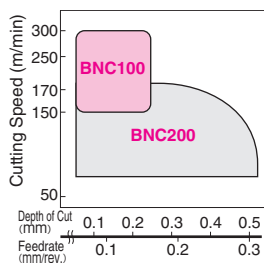
• l : 16.5 • s : 3.18
• ϕd : 9.525

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

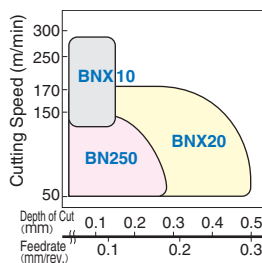
Shape	ISO Cat. No.	r
Light cut	TEGN 160302 160304 160308	0.2
		0.4
		0.8

SUMIBORON Application Range Map

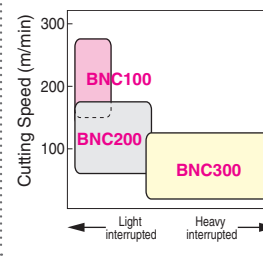
① Continuous Cut of Hardened Steel



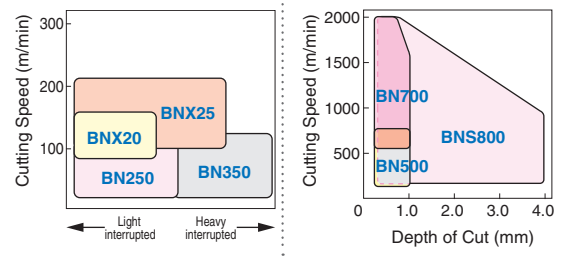
② Interrupted Cut of Hardened Steel



③ Grey Cast Iron



④ Grey Cast Iron

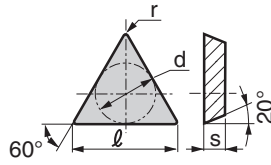


TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TE Triangular Type
20° Relief
Without Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

positive inserts

TE 1603

- ℓ : 16.5 • s : 3.18
- ϕd : 9.525

●▲ = 1 piece pack Stacked
●○ = 1 piece pack and 10 pieces pack both Stacked

Condition	Coated CBN			CBN			PCD							
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA (NF Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
One side	NF-TEGN 160304P		0.4														●

● SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	TEGN 160302 160304 160308	0.2 0.4 0.8													●	●

S

TE 2204

- ℓ : 22.0 • s : 4.76
- ϕd : 12.7

Condition	Coated Carbide										Coated Cermet	Cermet		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
Light cut	TEGN 220404 220408 220412	0.4 0.8 1.2

W

TE 2204

- ℓ : 22.0 • s : 4.76
- ϕd : 12.7

●▲ = 1 piece pack Stacked
●○ = 1 piece pack and 10 pieces pack both Stacked

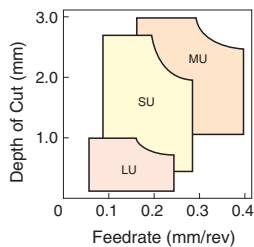
Condition	Coated CBN			CBN			PCD							
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

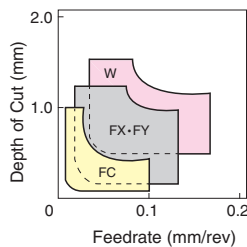
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered	TEGN 220404 220408		0.4 0.8													●	

Chipbreaker Application Range Map

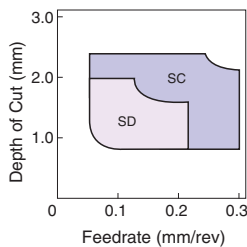
① Medium Cut of Steel



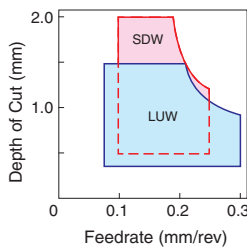
② High Precision Machining (Finishing)



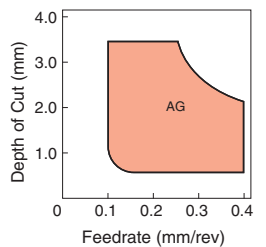
③ High Precision Machining (Light Cut)



④ Wiper Insert



⑤ Cut of Aluminum

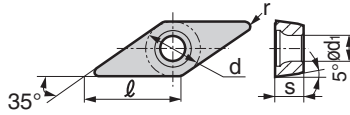


VB

35° Diamond Type

5° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VB 1103

- l : 11.1 • s : 3.18
- ϕd : 6.35 • $\phi d1$: 2.8

Page for Applicable Holder Boring Bars D34

	Shape	ISO Cat. No.	r
Finishing	LU	VBMT 110304N-LU 110308N-LU New	0.4 0.8
	<small>Rake Angle 12°</small>		
Light cut	SU	VBMT 110304N-SU 110308N-SU	0.4 0.8
	<small>Rake Angle 8°</small>		

Condition	Coated Carbide												Coated Cermet	Cermet		Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

VB 1103

- l : 11.1 • s : 3.18
- ϕd : 6.35 • $\phi d1$: 2.8

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder Boring Bars D34

● SUMIBORON (One-use Type)

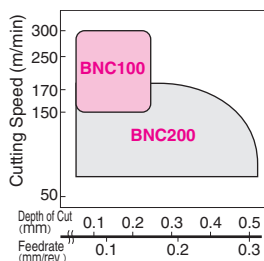
	Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered		NU-VBGW 110302 New	T-NU-VBGW 110302 New	0.2
		110304 New	110304 New	0.4
		110308 New	110308 New	0.8
General type for continuous cutting		NU-VBGW 110302M New	T-NU-VBGW 110302M New	0.2
		110304M New	110304M New	0.4
		110308M New	110308M New	0.8

Condition	Coated CBN			CBN				PCD						
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

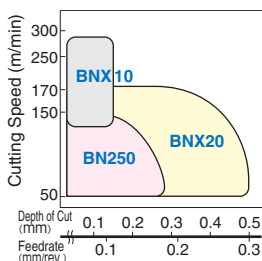
*:Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON Application Range Map

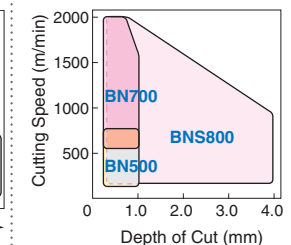
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



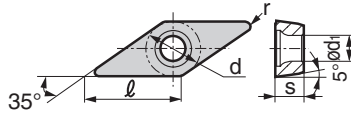
(C) Grey Cast Iron



35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VB 35° Diamond Type
5° Relief
With Insert Hole



Information in "Shape" column

- Name of chipbreaker
- Reference no. of chipbreaker
- Application Range Map (at the bottom of this page).
- Rake angle of chipbreaker

positive inserts

VB 1604

- l : 16.6
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 4.4

		Application																														
		P	M	K	N	S	H	Coated Carbide					Coated Cermet	Cermet	Carbide	Ceramic																
Condition	Cut	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

Shape	ISO Cat. No.	r
LU (Rake Angle 12°)	VBMT 160404N-LU 160408N-LU	0.4 0.8
SU (Rake Angle 8°)	VBMT 160404N-SU 160408N-SU	0.4 0.8
VBMT 160404 160408		0.4 0.8

D

R

S

T

VB 1604

- l : 16.6
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 4.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

		Coated CBN			CBN					PCD					
Condition	Cut	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	Light	●	●	●	●	●	●	●	●	●	●	●	●	●	●

V

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
1-cornered	NU-VBGW 160402M 160404M 160408M	T-NU-VBGW 160402M 160404M 160408M	0.2 0.4 0.8

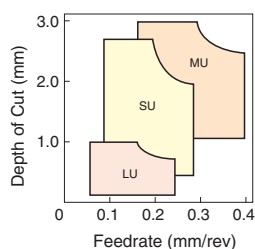
W

Solid CBN Ceramic

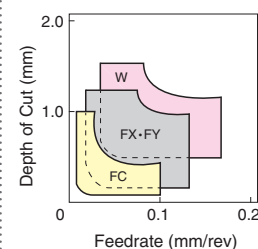
※Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map

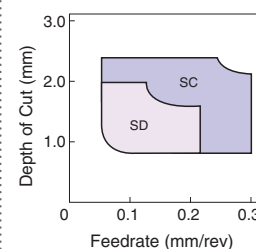
① Medium Cut of Steel



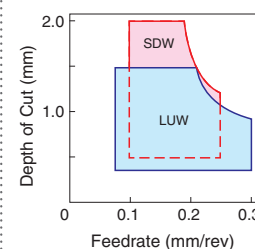
② High Precision Machining (Finishing)



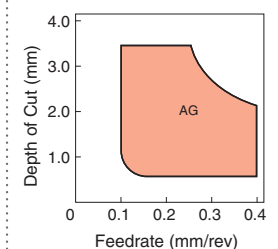
③ High Precision Machining (Light Cut)



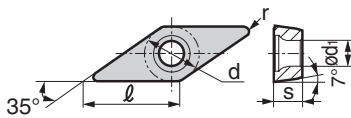
④ Wiper Insert



⑤ Cut of Aluminum



VC 35° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VC 0802

- l : 8.3
- s : 2.38
- φd : 4.76
- φd1 : 2.3

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
T-cornered 	NU-VCGW 080202M <i>New</i>	T-NU-VCGW 080202M <i>New</i>	0.2
	080204M <i>New</i>	080204M <i>New</i>	0.4
	080208M <i>New</i>	080208M <i>New</i>	0.8

※Depth-of-cut for one-use type is 0.5mm or less.

VC 1103

- l : 11.1
- s : 3.18
- φd : 6.35
- φd1 : 2.8

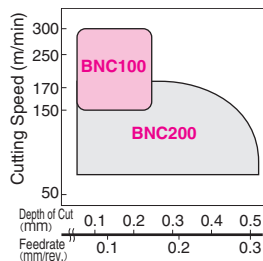
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **C49** **C51** **C62**

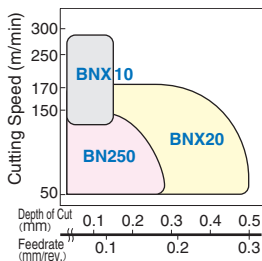
Shape	ISO Cat. No.	r
FC 	VCGT 110301N-FC <i>New</i>	0.1
	110302N-FC <i>New</i>	0.2
	110304N-FC <i>New</i>	0.4
FX 	VCGT 110301R-FX <i>New</i>	0.1
	110301L-FX <i>New</i>	0.1
	110302R-FX <i>New</i>	0.2
	110302L-FX <i>New</i>	0.2
FX 	VCET 1103008R-FX <i>New</i>	0.08
	1103008L-FX <i>New</i>	0.08
	110301R-FX <i>New</i>	0.1
	110301L-FX <i>New</i>	0.1
	1103018R-FX <i>New</i>	0.18
	1103018L-FX <i>New</i>	0.18
FY 	VCGT 110301R-FY <i>New</i>	0.1
	110301L-FY <i>New</i>	0.1
	110302R-FY <i>New</i>	0.2
	110302L-FY <i>New</i>	0.2

SUMIBORON Application Range Map

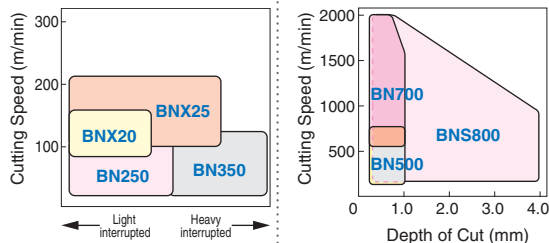
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



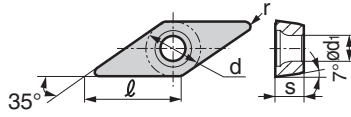
(C) Grey Cast Iron



35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VC 35° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

VC 1103

- ℓ : 11.1
- s : 3.18
- ϕd : 6.35
- $\phi d1$: 2.8

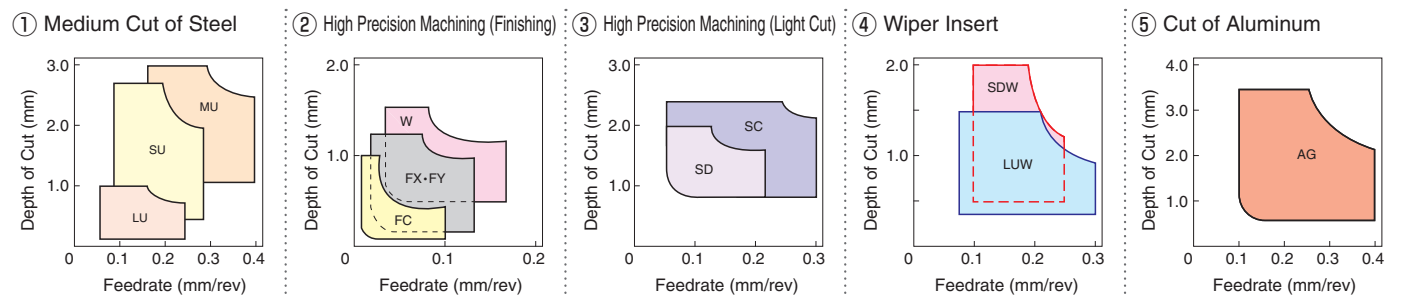
Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

Page for Applicable Holder | External Holders **C49** **C51** **C62**

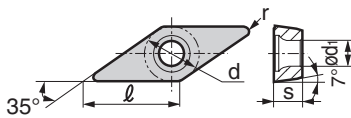
Shape	ISO Cat. No.	r
FY (Finishing) Rake Angle 15°	VCET 1103008R-FY 1103008L-FY 110301R-FY 110301L-FY 1103018R-FY 1103018L-FY	0.08 0.08 0.1 0.1 0.18 0.18
SU (Light cut) Rake Angle 8°	VCMT 110302N-SU 110304N-SU 110308N-SU	0.2 0.4 0.8
AG (For Al. use) Rake Angle 20°	VCGT 110302N-AG 110304N-AG	0.2 0.4

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



VC 35° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VC 1103

- l : 11.1
- s : 3.18
- phi d : 6.35
- phi d1 : 2.8

Application: P steel, M stainless steel, K cast iron, N non-ferrous metal, S exotic alloy, H hardened steel

Condition: Continuous Cut, Medium Cut, Interrupted Cut

External Holders: C49, C51, C62

Legend: ●▲ = 1 piece pack Stocked, ● = 1 piece pack and 10 pieces pack both Stocked

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
1-cornered		NU-VCGW 110302 110304	T-NU-VCGW 110302 110304	0.2	—	—	—	—	—	●	—	—	—	—	—	—
					0.4	—	—	—	—	—	●	—	—	—	—	—
1-cornered		NU-VCGW 110302M 110304M	T-NU-VCGW 110302M 110304M	0.2	—	—	—	—	—	●	—	—	—	—	—	—
					0.4	—	—	—	—	—	●	—	—	—	—	—

※Depth-of-cut for one-use type is 0.5mm or less.

SUMIDIA (NF Type)

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		NF-VCMT 110301 110302 110304	0.1	—	—	—	—	—	—	—	—	—	—	—	—	●	
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	●
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	●

SUMIDIA

Shape	ISO Cat. No.	r	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200		
1-cornered		VCMT 110301 110302 110304	0.1	—	—	—	—	—	—	—	—	—	—	—	—	▲	
			0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	▲
			0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	▲

VC 1604

- l : 16.6
- s : 4.76
- phi d : 9.525
- phi d1 : 4.4

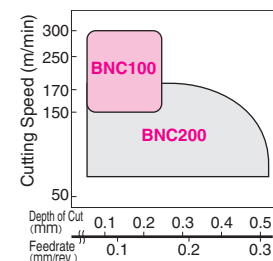
Condition	Coated Carbide										Coated Cermets	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T200Z	T300Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders C28 Boring Bars D36

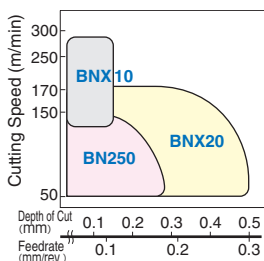
Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T200Z	T300Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Finishing LU Rake Angle 12°	VCMT 160404N-LU 160408N-LU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Light cut SU Rake Angle 8°	VCMT 160404N-SU 160408N-SU	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
For Al. use AW Rake Angle 25°	VCGT 160408N-AW 160412N-AW	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SUMIBORON Application Range Map

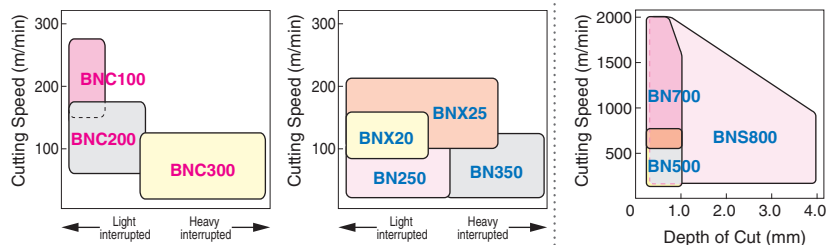
(A) Continuous Cut of Hardened Steel



(B) Interrupted Cut of Hardened Steel



(C) Grey Cast Iron

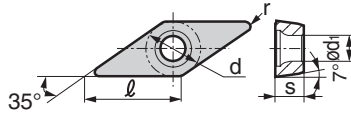


▲ mark : To be replaced by new item (Please confirm stock availability)

35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VC 35° Diamond Type
7° Relief
With Insert Hole



Information in "Shape" column

- GU: Name of chipbreaker
- App. Map ⑤: Reference no. of chipbreaker Application Range Map (at the bottom of this page).
- Rake Angle 7°: Rake angle of chipbreaker

positive inserts

VC 1604

- l : 16.6
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 4.4

Page for Applicable Holder External Holders **C28** Boring Bars **D36**

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

C

VC 1604

- l : 16.6
- s : 4.76
- ϕd : 9.525
- $\phi d1$: 4.4

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder External Holders **C28** Boring Bars **D36**

Condition	Coated CBN			CBN					PCD					
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX250	BN350	BN500	BN700	BN800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

D

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r
	NU-VCGW 160404 160408	T-NU-VCGW 160404 160408	0.4 0.8

T

● Coated SUMIBORON (One-use Type)

2NC-VCGW 160404
160408

V

● SUMIBORON

VCMW 160404
160408

W

● SUMIDIA (NF Type)

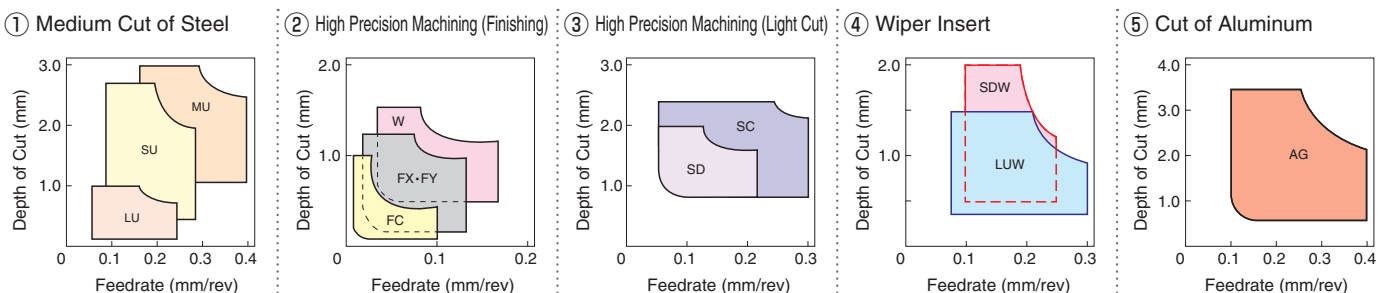
NF-VCMT 160404
160408
160412

Solid CBN Ceramic

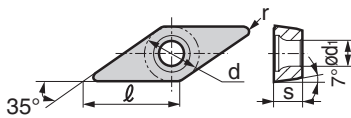
*Depth-of-cut for one-use type is 0.5mm or less.

*Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map



VC 35° Diamond Type
7° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VC 1604

- l : 16.6
- s : 4.76
- phi d : 9.525
- phi d1 : 4.4

- ▲ = 1 piece pack Stocked
- = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder
External Holders **C28**
Boring Bars **D36**

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	
			0.8	1.2
VCMT 160408 160412			0.8	1.2
WF VCMT 160412-WF			1.2	

VC 2205

- l : 20.2
- s : 5.56
- phi d : 12.7
- phi d1 : 5.5

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide		Ceramic													
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder External Holders **C32**

Shape	ISO Cat. No.	r	
		2.0	3.0
AW VCGT 220520N-AW 220530N-AW		2.0	3.0
AG VCGT 220530N-AG		3.0	

VC 2205

- l : 20.2
- s : 5.56
- phi d : 12.7
- phi d1 : 5.5

- ▲ = 1 piece pack Stocked
 - = 1 piece pack and 10 pieces pack both Stocked
- Page for Applicable Holder
External Holders **C32**

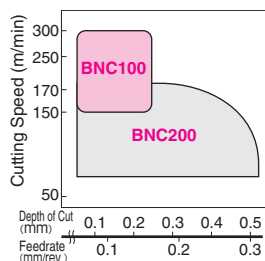
Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIDIA

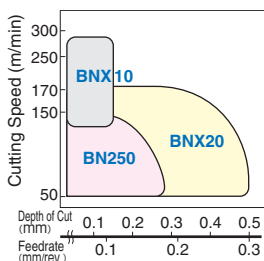
Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	
			2.0	3.0
VCMT 220520 220530			2.0	3.0

SUMIBORON Application Range Map

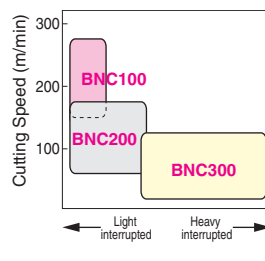
(A) Continuous Cut of Hardened Steel



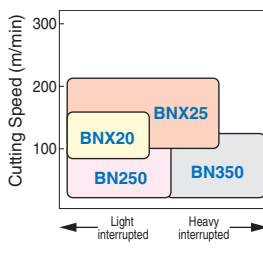
(B) Interrupted Cut of Hardened Steel



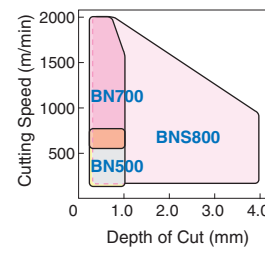
(C) Grey Cast Iron



(D) Grey Cast Iron



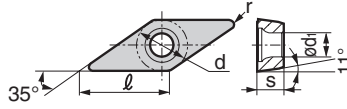
(E) Grey Cast Iron



35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VP 35° Diamond Type
11° Relief
With Insert Hole



Information in "Shape" column

- 1 Name of chipbreaker
- 2 Reference no. of chipbreaker
- 3 Application Range Map (at the bottom of this page).
- 4 Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

VP 0802

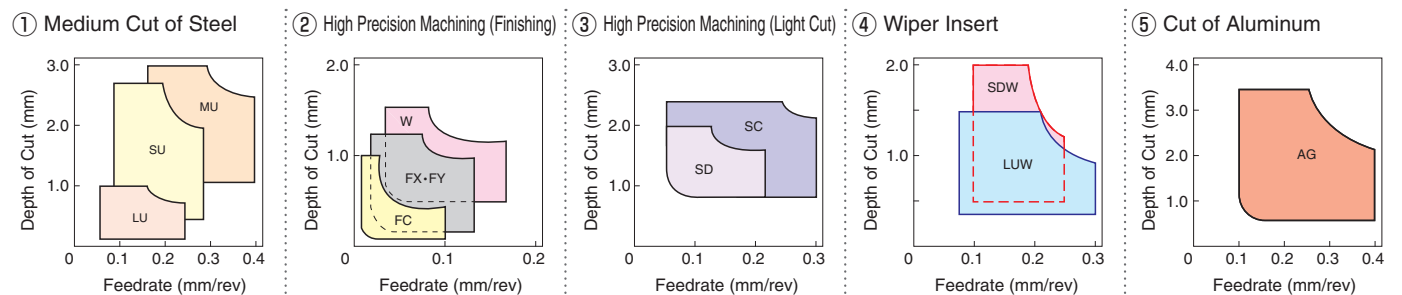
- l : 8.3
- s : 2.38
- ϕd : 4.76
- $\phi d1$: 2.3

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

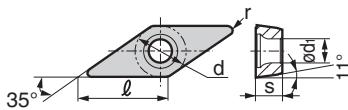
Shape	ISO Cat. No.	r
FX Rake Angle 15°	VPET 0802008R-FX <i>New</i>	0.08
	0802008L-FX <i>New</i>	0.08
	0802015R-FX <i>New</i>	0.15
	0802015L-FX <i>New</i>	0.15
	0802018R-FX <i>New</i>	0.18
	0802018L-FX <i>New</i>	0.18
FY Rake Angle 15°	VPET 0802008R-FY <i>New</i>	0.08
	0802008L-FY <i>New</i>	0.08
	0802015R-FY <i>New</i>	0.15
	0802015L-FY <i>New</i>	0.15
	0802018R-FY <i>New</i>	0.18
	0802018L-FY <i>New</i>	0.18

- positive inserts
- C
- D
- R
- S
- T
- V
- W
- Solid CBN Ceramic

Chipbreaker Application Range Map



VP 35° Diamond Type
11° Relief
With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

VP 1103

- l : 11.1
- s : 3.18
- φd : 6.35
- φd1 : 2.8

Page for Applicable Holder External Holders **C49** **C63**

Condition	Coated Carbide										Coated Cermet	Cermets			Carbide			Ceramic												
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Application	P	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	K	K	K	K	N	N	N	N	N	S	S	S	S	H

Finishing

Shape	ISO Cat. No.	r
FX Rake Angle 15°	VPGT 110301R-FX 110301L-FX 110302R-FX 110302L-FX	0.1 0.1 0.2 0.2
FX Rake Angle 15°	VPET 1103003R-FX 1103003L-FX 110301R-FX 110301L-FX 110302R-FX 110302L-FX	0.03 0.03 0.1 0.1 0.2 0.2
FY Rake Angle 15°	VPGT 110301R-FY 110301L-FY 110302R-FY 110302L-FY	0.1 0.1 0.2 0.2
FY Rake Angle 15°	VPET 1103003R-FY 1103003L-FY 110301R-FY 110301L-FY 110302R-FY 110302L-FY	0.03 0.03 0.1 0.1 0.2 0.2

positive inserts

C

D

R

S

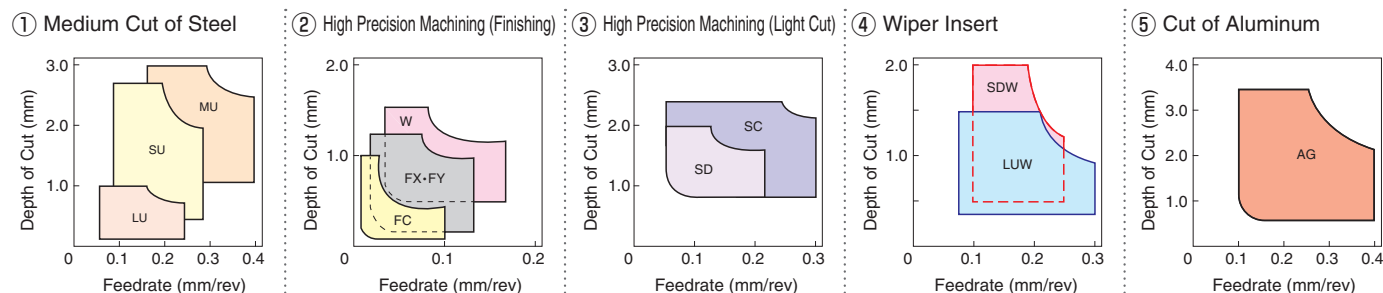
T

V

W

Solid CBN Ceramic

Chipbreaker Application Range Map

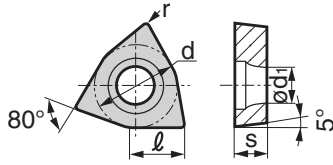


TRIGON TYPE

POSITIVE INSERT

Indexable Inserts for Turning

WB Trigon Type
5° Relief
With Insert Hole



Information in "Shape" column

- ① Name of chipbreaker
- ② Reference no. of chipbreaker
- ③ Application Range Map (at the bottom of this page).
- ④ Rake angle of chipbreaker

Application P steel M stainless steel K cast iron N non-ferrous metal S exotic alloy H hardened steel

WB 0601

- ℓ : 3.2
- s : 1.59
- ϕd : 3.97
- $\phi d1$: 2.2

Condition	Coated Carbide										Coated Cermet	Cermets		Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C	
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Page for Applicable Holder Boring Bars **D14**

Shape	ISO Cat. No.	r	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
FW Rake Angle 20° (Left-hand insert shown)	WBGT 060102R-FW	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	060102L-FW	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104R-FW	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104L-FW	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FX Rake Angle 15° (Left-hand insert shown)	WBGT 060102R-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	060102L-FX	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104R-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104L-FX	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FY Rake Angle 15° (Left-hand insert shown)	WBGT 060102R-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060102L-FY	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104R-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104L-FY	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
W Rake Angle 10° (Left-hand insert shown)	WBGT 060102R-W	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060102L-W	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104R-W	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104L-W	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

WB 0601

- ℓ : 3.2
- s : 1.59
- ϕd : 3.97
- $\phi d1$: 2.2

●▲ = 1 piece pack Stocked
●○ = 1 piece pack and 10 pieces pack both Stocked

Page for Applicable Holder Boring Bars **D14**

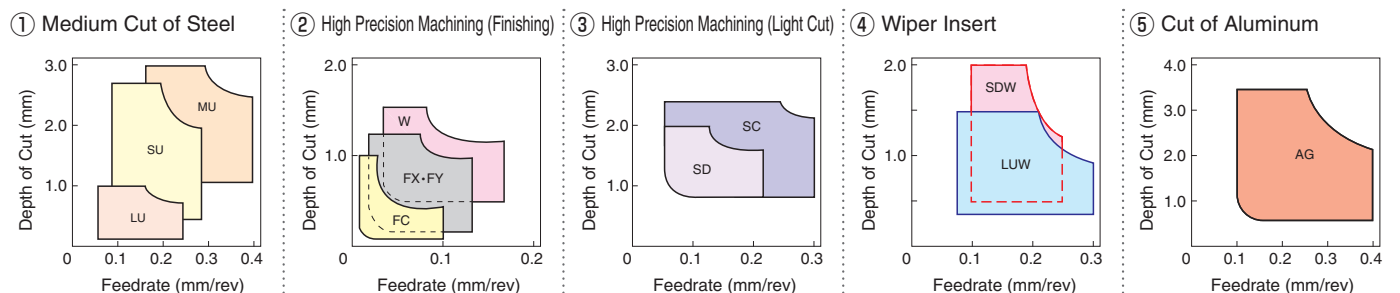
Condition	Coated CBN				CBN				PCD				
	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.		10 pieces pack ISO Cat. No.		r	BNC80	BNC100	BNC200	BNC300	BNX10	BNX20	BNX25	BNX50	BN500	BN700	BNS800	DA150	DA2200
	1-cornered Sharp Edge Type	NU-WBEW 060102L-F	060104L-F <i>New</i>	T-NU-WBEW 060102L-F		060104L-F <i>New</i>	0.2	●	●	●	●	●	●	●	●	●	●	●
060104L-F			060104L-F		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●
 Small Edge Treatment Type	NU-WBEW 060102L-S	060104L-S <i>New</i>	T-NU-WBEW 060102L-S	060104L-S <i>New</i>	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●
	060104L-S		060104L-S		0.4	●	●	●	●	●	●	●	●	●	●	●	●	●

*Depth-of-cut for one-use type is 0.5mm or less.

Chipbreaker Application Range Map

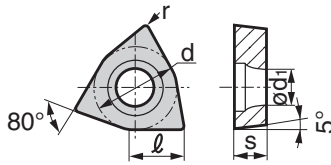


WB

Trigon Type

5° Relief

With Insert Hole



- Grade Selection >>> A2
- Grade/Chipbreaker Selection >>> B4
- Chipbreaker Selection >>> B10

WB 0601

- l : 3.2 • s : 1.59
- phi d : 3.97 • phi d1 : 2.2

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked
 Page for Applicable Holder
 Boring Bars D14

Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Material															
				BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200			
1-cornered	WBMT 060101L 060102L 060104L		0.1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

WB 0802

- l : 4.6 • s : 2.38
- phi d : 4.76 • phi d1 : 2.4

Page for Applicable Holder Boring Bars D14

Condition	Coated Carbide										Coated Cermet	Cermet			Carbide		Ceramic														
	AC700G	AC2000	AC3000	AC720	AC610M	AC630M	AC410K	AC300G	ACZ150	ACZ310	EH510Z	EH520Z	EH10Z	EH20Z	T2000Z	T3000Z	T110A	T1200A	T12A	T130A	ST10P	ST20E	A30	G10E	H1	NS260	NS260C	NB90S	NB100C		
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Shape	ISO Cat. No.	r
Finishing FW <small>Bake Angle 20°</small>	WBGT 080202R-FW 080202L-FW 080204R-FW 080204L-FW	0.2
		0.2
		0.4
		0.4
Finishing FX <small>Bake Angle 15°</small>	WBGT 080202R-FX 080202L-FX 080204R-FX 080204L-FX	0.2
		0.2
		0.4
		0.4

WB 0802

- l : 4.6 • s : 2.38
- phi d : 4.76 • phi d1 : 2.4

●▲ = 1 piece pack Stocked
● = 1 piece pack and 10 pieces pack both Stocked
 Page for Applicable Holder
 Boring Bars D14

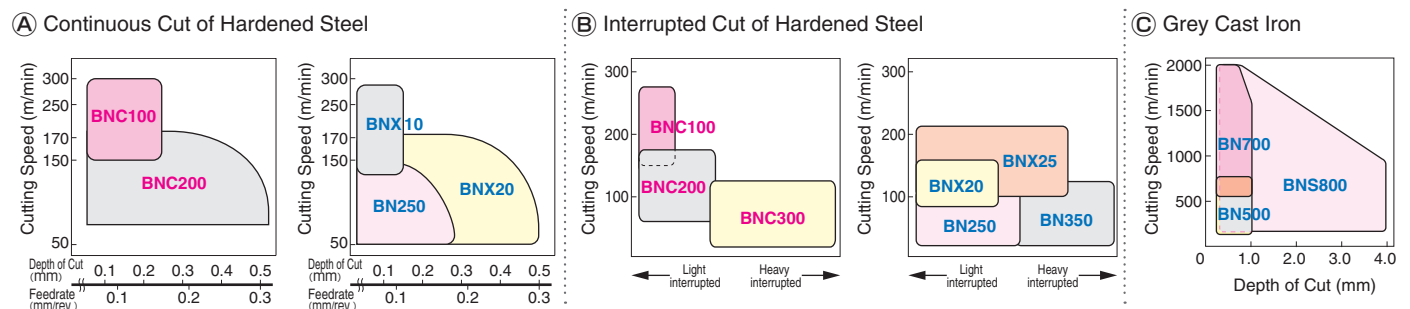
Condition	Coated CBN			CBN				PCD					
	BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●

● SUMIBORON (One-use Type)

Shape	1 piece pack ISO Cat. No.	10 pieces pack ISO Cat. No.	r	Material															
				BNC80	BNC100	BNC200	BNX10	BNX20	BNX25	BN250	BN350	BN500	BN700	BNS800	DA150	DA2200			
1-cornered	 Sharp Edge Type	NU-WBEW 080202L-F 080204L-F	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		NU-WBEW 080202L-S 080204L-S	0.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*Depth-of-cut for one-use type is 0.5mm or less.

SUMIBORON Application Range Map



CERAMIC

Indexable Inserts for Turning

Negative With Insert Hole

Negative Without Insert Hole

Inserts

C

D

R

S

T

V

W

Solid CBN Ceramic

Application K cast iron S exotic alloy H hardened steel

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	CNMG 120408N-UZ	●	●	—	—	12.70	4.76	0.8	5.16
	CNMA 120408 CNMA 120412	●	●	—	—	12.70	4.76	0.8 1.2	5.16
	CNGA 120404 CNGA 120408 CNGA 120412	—	—	●	●	12.70	4.76	0.4 0.8 1.2	5.16

● 80° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	DNMA 150408 DNMA 150412	●	—	—	—	12.70	4.76	0.8 1.2	5.16
	DNGA 150404 DNGA 150408 DNGA 150412	—	—	●	—	12.70	4.76	0.4 0.8 1.2	5.16

● 55° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	SNMG 120412N-UZ SNMG 120420N-UZ	—	—	—	—	12.70	4.76	1.2 2.0	5.16
	SNMA 120408 SNMA 120412	●	●	—	—	12.70	4.76	0.8 1.2	5.16
	SNGA 120404 SNGA 120408 SNGA 120412	—	—	●	—	12.70	4.76	0.4 0.8 1.2	5.16

● Square Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	TNMG 160412N-UZ	▲	—	—	—	9.525	4.76	1.2	3.81
	TNMA 160408 TNMA 160412 TNMA 160416	●	●	—	—	9.525	4.76	0.8 1.2 1.6	3.81
	TNGA 160404 TNGA 160408 TNGA 160412 TNGA 160416	—	—	●	●	9.525	4.76	0.4 0.8 1.2 1.6	3.81

● 35° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
	VNGA 160404 VNGA 160408	—	—	—	—	9.525	4.76	0.4 0.8	3.81

● Trigon Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
	WNMA 080408 WNMA 080412	●	●	—	—	12.70	4.76	0.8 1.2	5.16

Application K cast iron S exotic alloy H hardened steel

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	CNMN 120408 CNMN 120412 CNMN 120416	●	●	—	—	12.70	4.76	0.8 1.2 1.6	—
	CNGN 120408 CNGN 120412 CNGN 120416 CNGN 120712	—	—	●	—	12.70	4.76	0.8 1.2 1.6 1.2	—

● 80° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	DNGN 150408 DNGN 150412 DNGN 150712	—	—	●	—	12.70	4.76	0.8 1.2 1.6	—
	DNGN 150416 DNGN 150712	—	—	●	—	12.70	7.94	1.2	—

● 55° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	ENGN 130408 ENGN 130412 ENGN 130708 ENGN 130712	—	—	—	—	12.70	4.76	0.8 1.2 0.8 1.2	—

● 75° Diamond Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	RNMN 120400	—	—	—	—	12.70	4.76	—	—
	RNGN 120400 RNGN 120700 RNGN 150700	—	—	●	—	12.70	4.76 7.94	—	—

● Round Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	SNMN 120408 SNMN 120412 SNMN 120416 SNMN 120420	●	●	—	—	12.70	4.76	0.8 1.2 1.6 2.0	—
	SNGN 120408 SNGN 120412 SNGN 120416 SNGN 120420	—	—	●	—	12.70	4.76	0.8 1.2 1.6 2.0	—
	SNGN 120708 SNGN 120712 SNGN 120716 SNGN 120720	—	—	▲	—	12.70	7.94	0.8 1.2 1.6 2.0	—

● Square Type

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	TNMG 160408 TNMG 160412 TNMG 160416 TNMG 160420	▲	—	—	—	9.525	4.76	0.8 1.2 1.6 2.0	—
	TNGN 160404 TNGN 160408 TNGN 160412 TNGN 160712	—	—	●	—	9.525	4.76	0.4 0.8 1.2 1.2	—




● Triangular Type

CERAMIC



Positive

Without Insert Hole


Application K cast iron S exotic alloy H hardened steel

Shape	ISO Cat. No.	Ceramic				Dimensions (mm)			
		NS260	NS260C	NB90S	NB100C	Inscribed Circle	Thickness	Nose Radius	Insert Hole
	RBGN 120700	—	—	—	—	12.70	7.94	—	—
	RBGN 150700	—	—	—	—	15.875	7.94	—	—
	RBGN 250900	—	—	—	—	25.40	9.52	—	—
	RBG 12S	—	—	—	—	12.00	11.0	—	—
	RBG 16S	—	—	●	—	16.00	13.0	—	—
	RBG 20S	—	—	—	—	20.00	15.0	—	—
	RBG 26S	—	—	—	—	26.00	16.0	—	—
	RCGX 090700	—	—	—	—	9.525	7.94	—	—
	RCGX 120700	—	—	—	—	12.70	7.94	—	—

● Square Type

	SPMN 120308	—	—	—	—	12.70	3.18	0.8	—
	SPMN 120312	—	—	—	—	—	—	1.2	—
	SPGN 090308	—	—	●	—	9.525	3.18	0.8	—
	SPGN 120308	—	—	●	—	12.70	3.18	0.8	—

● Triangular Type

	TPGN 110304	—	—	●	●	6.35	3.18	0.4	—
	TPGN 110308	—	—	●	●			0.8	
	TPGN 160304	—	—	●	●	9.525	3.18	0.4	
	TPGN 160308	—	—	●	●			0.8	

Inserts



Solid CBN
Ceramic

Refer to pages L46 ~ L47
for holders.

Application **K** cast iron

Inserts

● 80°
Diamond
Type



● 55°
Diamond
Type



● Round
Type



● Square
Type



Solid CBN
Ceramic

● Triangular
Type

Shape	ISO Cat. No.	BNS800	Dimensions (mm)				Application Holder				
			Inscribed Circle	Thickness	Nose Radius	Insert Hole					
	CNGN 090308	●	9.525	3.18	0.8	No	External Holders L46				
	CNGN 090308F	●			1.2						
	CNGN 090312	●			0.8						
	CNGN 090312F	●			1.2						
	CNGN 120408	●	12.70	4.76	0.8	No	External Holders L46				
	CNGN 120412	●			1.2						
	CNGN 120416	●			1.6						
	CNGA 120408	●	12.70	4.76	0.8	Yes	External Holders C9 C10				
	CNGA 120412	●			1.2		Boring Bars D42				
	CNGX 120408	●	12.70	4.76	0.8	Dimple	External Holders L47				
	CNGX 120412	●			1.2						
	CNGX 120416	●			1.6						
	DNGN 110308	●	9.525	3.18	0.8	No	External Holders L47				
	DNGN 110308F	●			1.2						
	DNGN 110312	●			1.2						
	RNGN 090300	●	9.525	3.18	—	No	External Holders L47				
	RNGN 090300F	●			—						
	RNGN 120300	●	12.70	3.18	—	No	External Holders L47				
	RNGN 120300F	●			—						
	RNGN 120400	●			4.76						
	SNGN 090308	●	9.525	3.18	0.8	No	External Holders L46				
	SNGN 090308F	●			1.2						
	SNEN 090308W	●			1.2						
	SNEN 090308FW	●			1.2						
	SNGN 090312	●			1.2						
	SNGN 090312F	●			1.2						
	SNGN 120308	●			12.70			3.18	0.8	No	External Holders L46
	SNGN 120308F	●							1.2		
	SNGN 120312	●							1.2		
	SNGN 120408	●			12.70			4.76	0.8	No	External Holders L46
SNGN 120412	●	1.2									
SNGN 120416	●	1.6									
SNGN 120420 <i>NEW</i>	●	2.0									
	SNGA 120408	●	12.70	4.76	0.8	Yes	External Holders C13 ~ C16				
	SNGA 120412	●			1.2		Boring Bars D45 D46				
	SNGX 120408	●	12.70	4.76	0.8	Dimple	External Holders L47				
	SNGX 120412	●			1.2						
	SNGX 120416	●			1.6						
	TNGN 110308	●	6.35	3.18	0.8	No	External Holders L46				
	TNGN 110308F	●			1.2						
	TNGN 110312	●			1.2						
	TNGN 110312F	●			1.2						
	TNGN 160408	●			9.525			4.76	0.8	No	External Holders L46
	TNGN 160412	●							1.2		
TNGN 160416	●	1.6									
TNGN 160420 <i>NEW</i>	●	2.0									
	TNGA 160408	●	9.525	4.76	0.8	Yes	External Holders C17 ~ C21				
	TNGA 160412	●			1.2		External Holders C49 C51 Boring Bars D47				

※ F : Sharp edge type W : Wiper insert FW : Wiper insert with sharp edge