

'09-'10

HIGH PERFORMANCE **TURNING TOOLS**

TURNING SYSTEMS



General
Information

Indexable
Inserts

Threading,
Grooving, &
Cut-Off Inserts

Ceramic
Inserts

PCBN & PCD
Inserts

Toolholders

Swiss
Toolholders

Boring
Bars

Threading,
Grooving, &
Cut-Off Holders

Technical
Information

ALMT



SUMITOMO

CARBIDE - CBN - DIAMOND

Sumitomo Worldwide Warehouse Network

Sumitomo Electric Carbide, Inc. introduces the *Worldwide Warehouse Network*

Below is a list of symbols you will find in our Turning Systems Catalog.



Sumitomo Electric Carbide, Inc. Headquarters

- = **Sumitomo USA stocked item**
- ★ = **Sumitomo *Worldwide Warehouse* item**
- ▲ = **Sumitomo USA limited availability item**

Sumitomo *Worldwide Warehouse* items are available through our international locations. Items marked with a star “★” in this catalog have a two week delivery.

“What’s New” in this catalog...

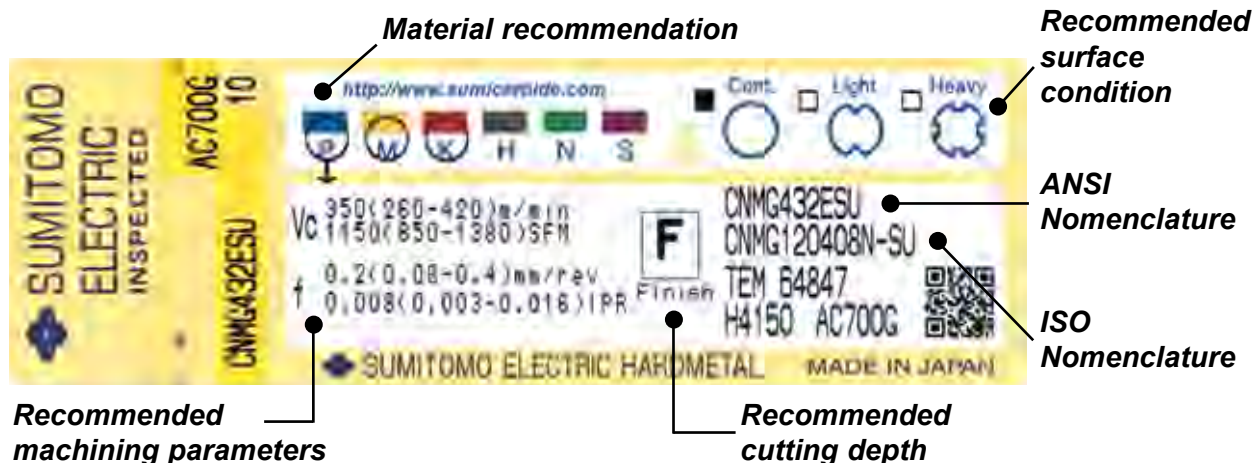
- AC820P & AC830P Grades for Steel
- AC410K Grade for Gray & Ductile Cast Iron
- AC510U & AC520U Grades for Exotic Material
- AC530U Grade for Stainless Steel
- WX2000 Ceramic Grade for Exotic Material
- DA1000 Diamond Grade for Non-ferrous Material
- New BNC™ Coated CBN Series
- EGE Chipbreaker
- SumiTurn Capto Toolholder for T-Rex
- SumiTurn B-Groove System
- GWB CBN Grooving System



Informative Packaging Labels

Sumitomo has designed an informative product label on its indexable inserts packaging. Each label provides basic technical recommendations to help the customer maximize tool productivity. If you are in need of further technical assistance call the Sumitomo Engineering Department.

- | | | |
|--------------------------|-------------------------|----------------------------|
| P Steel | K Cast Iron | N Non-Ferrous Metal |
| M Stainless Steel | H Hardened Steel | S Super Alloys |



TURNING SYSTEMS

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Look for "Tool Tips" throughout this catalog for increased tooling productivity.

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CARBIDE - CBN - DIAMOND

1-800-950-5202

www.sumicarbide.com

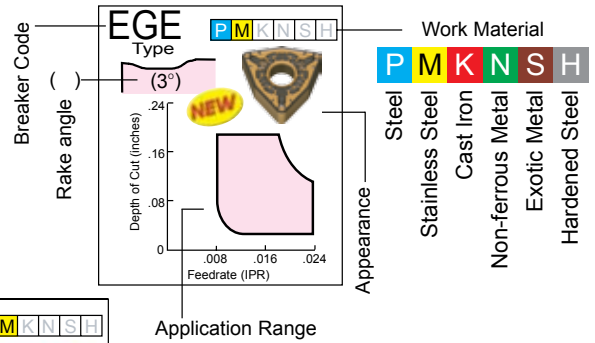


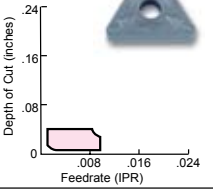
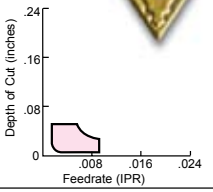
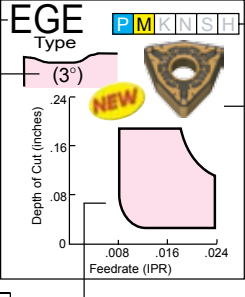
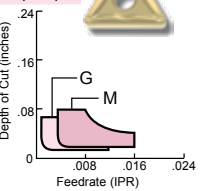
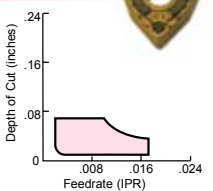
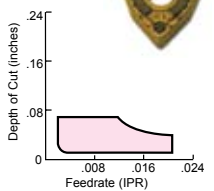
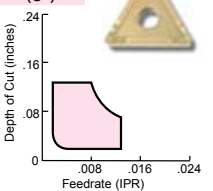
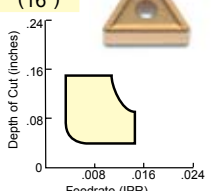
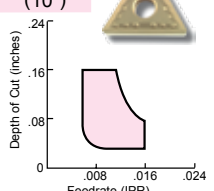
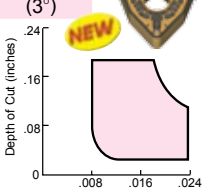
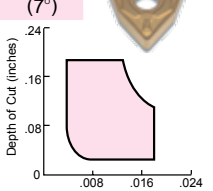
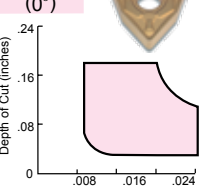
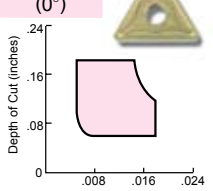
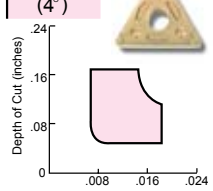
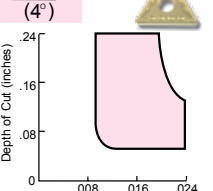
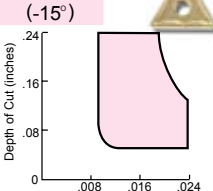
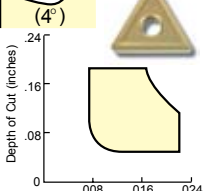
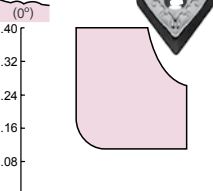
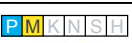
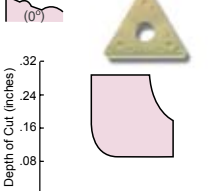
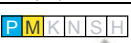
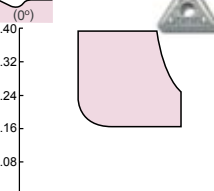
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( Bumpy breaker  Standard breaker)

(Legend)



Fine Finishing	EFA Type  (20°) 	EFL Type  (10°) 		
	ESU Type  (13°) 	ELU Type  (10°) 		
Finishing	ELUW Type  (10°) 	ESX Type  (3°) 	EEX Type  (16°) 	EUP Type  (10°) 
	EGE Type  (3°) 	EGU Type  (7°) 	EGUW Type  (0°) 	EUX Type  (0°) 
Light-Medium Cut	ENG Type  (4°) 	EMU Type  (4°) 	EMX Type  (-15°) 	ENZ Type  (4°) 
	EHG Type  (0°) 	ENP Type  (0°) 	EHP Type  (0°) 	
Medium Cut				
Medium~Rough Cut				
Rough~Heavy Cut				



4. Polycrystalline Cubic Boron Nitride (PCBN) and Coated PCBN

Grade	Hardness (Hv)	Applications
BNX10	2,800 - 3,200	High speed continuous cutting of hardened steels
BNX20	3,200 - 3,400	Continuous cutting of hardened steels
BN250	3,200 - 3,500	Continuous and mild interrupted cutting of hardened steels and cast irons
BN300	3,300 - 3,500	Interrupted machining of hardened steel
BN350	3,300 - 3,500	Heavy interrupted cutting of hardened steels
BNX25	3,000 - 3,200	High speed interrupted cutting of hardened steels
BN100	4,000 - 4,500	Finishing of exotics and cast irons
BN500	3,300 - 3,500	High speed turning and milling of gray and nodular cast irons
BN600	3,900 - 4,200	High speed turning and milling of gray cast iron and finishing of exotic materials
BN700	4,100 - 4,400	High speed machining of cast irons and powdered metals
NEW BNC30G	3,300 - 3,500	Interrupted grooving of hardened steel
NEW BNC100	2,900 - 3,200	TiCN hybrid coating for continuous to light interrupted high speed finishing of hardened steel
BNC80	3,200 - 3,400	TiN base coated to maintain surface finish longer in steel applications
BNC150	3,000 - 3,300	TiCN base coated for high speed machining of hardened steels
NEW BNC160	3,100 - 3,300	TiCN base coated for general and high precision finishing of hardened steels
NEW BNC200	3,300 - 3,500	TiAlN base coated for high wear resistance in hardened steel machining
NEW BNC300	3,300 - 3,500	TiAlN base coated for interrupted cutting of hardened steels
BNS800	4,000 - 4,300	Solid PCBN for high speed turning and milling of gray cast iron

5. Polycrystalline Diamond (PCD)

Grade	Hardness (Hv)	Applications
NEW DA1000	11,000 - 12,000	Finishing, roughing and interrupted machining of aluminum and non-ferrous materials
DA2200	9,000 - 10,000	Finishing, roughing and interrupted machining of aluminum and non-ferrous materials
DA150	10,000 - 12,000	Machining of aluminum, copper, wood, rubber, graphite and carbide
DA200	8,000 - 10,000	Interrupted cutting of non-ferrous alloys and plastics
DA90	10,000 - 12,000	High-silicon aluminum alloys, ceramics and carbide cutting

6. Uncoated Carbide

Group	Grade	Hardness (HRA)	T.R.S. (psi)	Applications
C-7	ST10P	91.7	235,000	Finishing to semi-finishing of steels
C-6	ST20E	91.2	250,000	Semi-finishing to light roughing of steel
C-5	ST30E	90.3	285,000	Light roughing to heavy roughing of steel
C-5A	S30E	91.3	348,000	Milling of steels and stainless steels
	A30N(A30)	90.6	354,000	Rough turning and milling of steel and stainless steel
C-4	H2	92.7	230,000	Finishing of cast iron and aluminum
C-3	H1	92.4	252,000	Finishing to semi-finishing of aluminum
	EH10	92.4	460,000	Continuous turning of exotic materials
	EH510	92.6	377,000	Improved wear resistance when turning exotic materials
C-2	G10E	91.0	280,000	Turning and milling of cast iron and aluminum
	EH20	91.0	474,000	Turning and milling of exotic materials
	EH520	91.8	436,000	Longer tool life for exotic material turning and milling

1. Coated Grades

Grade	Coated Layer	Applications	Color
NEW AC820P*	Multi-Phase Al ₂ O ₃	General purpose to roughing of steels and stainless steels	Gold
NEW AC830P	Multi-Phase Al ₂ O ₃	Interrupted roughing of steels and stainless steels	Gold
YB100	Multi-Phase Al ₂ O ₃	Interrupted roughing of cast irons/continuous steel and SS finishing	Gold
AC2000	Multi-Phase Al ₂ O ₃	General purpose to roughing of steels and stainless steels	Gold
AC3000	Multi-Phase Al ₂ O ₃	Interrupted roughing of steels and stainless steels	Gold
AC610M	High Strength Al ₂ O ₃	High speed, high efficiency cutting with a high hardness substrate	Gold
AC630M	High Strength Al ₂ O ₃	General cutting grade with a high strength substrate	Gold
NEW AC410K	FF Coating	Continuous to light interrupted turning of gray and ductile cast iron	Gold
AC720	TiC Coating	Light roughing to heavy rouging of steels and stainless steels	Silver
AC300G	Multi-Phase Al ₂ O ₃	General purpose machining of ductile cast iron	Gold
AC300G-S	Multi-Phase Al ₂ O ₃	Continuous turning of gray and ductile irons	Gold
AC700G	Multi-Phase Al ₂ O ₃	Interrupted roughing of cast irons/continuous steel and SS finishing	Gold
NEW AC510U	ZX Coating	Finishing of exotic materials	Brown
NEW AC520U	ZX Coating	General purpose turning of exotic materials	Brown
NEW AC530U	ZX Coating	Interupted, general cutting of steel and interrupted turning of stainless steel	Brown
EH10Z	Double Phase PVD	Continuous turning of exotic materials	Gold
EH20Z	Double Phase PVD	Turning and milling of exotic materials	Gold
EH510Z	ZX Coating	Improved wear resistance when turning exotic materials	Gold
EH520Z	ZX Coating	Longer tool life for exotic material turning and milling	Gold
AC225	Multi-Phase Al ₂ O ₃	Steel and stainless steel threading and cut-off applications	Gold
ACZ150	ZX Coating	Steel and stainless steel threading and cut-off applications	Pink
ACZ310	ZX Coating	Boring of steels, stainless steel and cast iron	Pink
EH520V	TiAlN Coating	Grooving of steels, stainless steels, cast iron and hi temp alloys	Purple

*Arriving May 2009

2. Cermet Grades

Grade	Hardness (Hv)	T.R.S. (kg/mm ²)	Applications
T1200A	1,680	165	General purpose to finish turning of steels and stainless steels
T2000Z	1,680	165	General purpose to finishing of steels and stainless steels with ZX coating
T3000Z	1,680	165	Medium to finish interrupted machining of steel and SS with ZX coating
T130A	1,550	200	Steel and stainless steel threading and cut-off applications

3. Ceramic Grades

Grade	Composition	Hardness (Hv)	Applications
NEW WX2000	Al ₂ O ₃ + SiC	1,980	High speed finishing to roughing of super alloy materials
NB90S	Al ₂ O ₃ + TiC	2,000	Finish turning of steels hardened up to 60 HRC
NS30	Si ₃ N ₄	1,650	Turning and milling of cast iron
NS260	Si ₃ N ₄	1,750	Turning and milling of cast iron
NS260C	Si ₃ N ₄	1,750	High speed continuous turning of cast iron



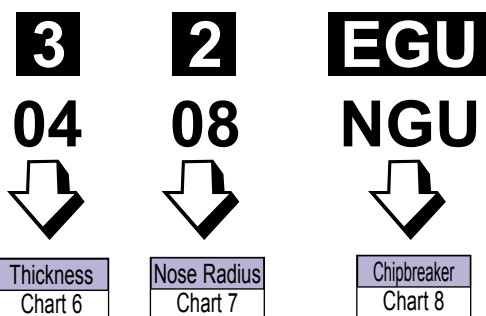


Chart 3.1 "M" and "U" Class Tolerance's

	Inscribed Circle		Nose Position Tolerance				Thickness
Symbol	M	U	M			U	M & U
Shapes	All	All	S,T,C,R	D	V	All	All
I.C. Size							
5/32 - 3/8	±.002	±.003	±.003	±.004	±.007	±.005	±.005
7/16 - 9/16	±.003	±.005	±.005	±.006	±.010	±.008	
5/8 - 3/4	±.004	±.007	±.006	±.006	—	±.001	
7/8	±.006	±.010	±.006	±.006	—	±.015	
1	±.006	±.010	±.007	±.007	—	±.015	
1 1/4	±.006	±.010	±.008	±.008	—	±.015	

Chart 4

Symbol	Hole	Chipbreaker	Hole Style
A	Yes	No	Straight
G	Yes	Double	Straight
M	Yes	Single	Straight
N	No	No	None
R	No	Single	None
D	Yes	No	Countersunk
T	Yes	Single	Countersunk
X	Yes	10° Rake Angle	Straight or Countersunk
E	No	No	None

Chart 7 Nose Radius

Sumitomo Number	I.S.O. Number	Radius
v	00	.0012"
0	01	.0039"
0.5	02	.0079"
1	04	.0156"
—	05	.0197"
2	08	.0312"
—	10	.0394"
3	12	.0469"
—	15	.0591"
4	16	.0625"
6	24	.0938"
8	32	.1250"
—	40	.1575"

Chart 8 Chipbreaker

See Pages 9-10 for chipbreaker information.



A.N.S.I.	C	N	M	G	4
I.S.O.	C	N	M	G	12
					
	Insert Shape Chart 1	Relief Angle Chart 2	Tolerance Chart 3	Type Chart 4	I.C. Chart 5

Chart 1 Insert Shape

Symbol	Insert Shape
V	35° Diamond
D	55° Diamond
T	60° Triangle
C	80° Diamond
W	80° Trigon
S	90° Square
R	Round
A, K, M	Parallelogram

Chart 2 Relief Angle

Symbol	Relief Angle
N	0° 
B	5° 
C	7° 
P	11° 
D	15° 
E	20° 
F	25° 

Chart 3 Tolerance

Symbol	Insert I.C.	Thickness	Nose Position
A	±.001	±.001	±.0002
C	±.001	±.001	±.0005
E	±.001	±.001	±.001
F	±.0005	±.001	±.0002
G	±.001	±.005	±.001
J	±.002	±.001	±.002
M	See Chart 3.1		
U	See Chart 3.1		

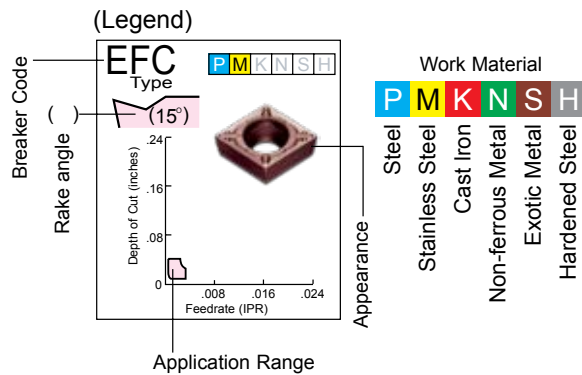
Chart 5 Inscribed Circle

Sumitomo Number	I.S.O. Number							
SHAPE SIZE	R	S	T	C	D	V	W	I.C.
(5)			06				03	5/32"
(6)			08					3/16"
			09					7/32"
	06							(.236)
2		06	11	06	07		04	1/4"
2.5		07		08	09			5/16"
	08							(.315)
3	09	09	16	09	11	16	06	3/8"
	10							(.394)
	12							(.472)
4	12	12	22	12	15	22	08	1/2"
5	15	15	27	16			16	5/8"
	16							(.630)
6	19	19	33	19				3/4"
	20							(.787)
	25							(.984)
8	25	25						1
	31							1-1/4"
	32							(1.260)

Chart 6 Thickness

Sumitomo Number	I.S.O. Number	Thickness
(2)	01	1/16"
1.5	02	3/32"
2	03	1/8"
2.5	T3	5/32"
3	04	3/16"
—	05	7/32"
4	06	1/4"
5	07	5/16"
5	08	5/16"
6	09	3/8"





( Bumpy breaker  Handed breaker)

Finishing	EFP Type: P M K N S H Rake angle: (10°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	EFK Type: P M K N S H Rake angle: (0°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	FW Type: P M K N S H Rake angle: (20°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	FX Type: P M K N S H Rake angle: (15°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	FY Type: P M K N S H Rake angle: (15°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024
Finish~Light Cut	R/L-SD Type: P M K N S H Rake angle: (0°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	R/L-SDW Type: P M K N S H Rake angle: (0°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	R/L-W Type: P M K N S H Rake angle: (10°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	EFM Type: P M K N S H Rake angle: (6°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	ENK Type: P M K N S H Rake angle: (8°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024
Light Cut	ESU Type: P M K N S H Rake angle: (8°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	ELU Type: P M K N S H Rake angle: (12°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	ELUW Type: P M K N S H Rake angle: (10°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	NAG Type: P M K N S H Rake angle: (20°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	ENS Type: P M K N S H Rake angle: (10°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024
Light~Medium Cut	EMU Type: P M K N S H Rake angle: (0°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024	ENF Type: P M K N S H Rake angle: (0°) Depth of Cut (inches): 0 to .24 Feedrate (IPR): 0 to .024			

■ TURNING APPLICATIONS

P
Steel

General Steel (Carbon Steel, Alloy Steel) Structural Steel					
Application	Finishing~Light		Medium	Roughing~Heavy	
ISO Classification	P05	P10	P20	P30 (M30)	P40 (M40)
COATED CARBIDE		YB100			
		AC700G			
			AC2000		
			NEW AC820P		
				AC3000	
				NEW AC830P	
COATED CERMET		T2000Z			
		T3000Z			
CERMET			T1200A		
CERAMIC	NB90S				
CARBIDE			ST10P	ST20E	A30
CBN					



Cast Iron			
High Speed Machining	Finishing	Medium	
	K01	K10	K20
AC300G-S/			
AC300G			
AC410K			
		AC700G/	
T1200A/			
NS260C/NS260			
		G10E	
BN700			
BNS800			
BN600			
BN500			



Hardened Steels			
Application	High Speed Machining	Finishing	Roughing
COATED CBN		BNC100	
		BNC160	
			BNC200
			BNC300
CBN	BNX10		
		BNX20	
		BN250	
		BNX25	
		BN300	
COATED CERAMIC		BN350	



Stainless Steels		
Application	Finishing-Light Cut	Medium-Roughing
COATED CARBIDE	AC610M	
		AC630M
		AC3000
CERMET	T2000Z	

S
Exotic
Metal

Exotic Materials		
Application	Finishing-Light Cut	Medium
COATED CARBIDE	EH510Z	
	EH520Z	
	AC510U	
CARBIDE	AC520U	
	EH510	
	EH520	
CERAMIC	WX2000	
CBN	BN600	
	BNS800	



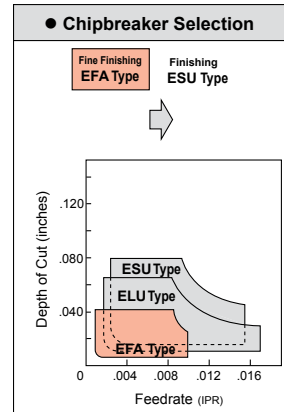
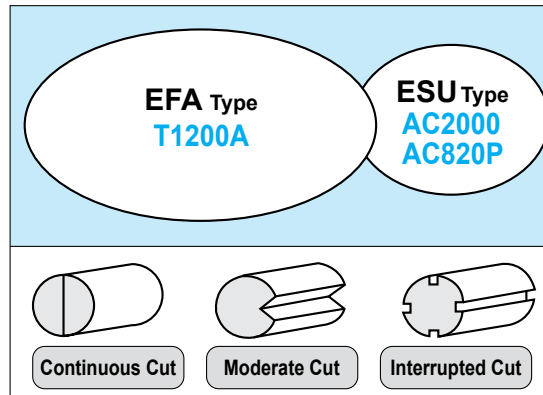
Non-Ferrous Materials		
Application	Finishing-Light Cut	Medium
PCD	 DA1000	
	DA2200	
	DA150	
CARBIDE		H1

Sintered Materials		
CBN	BN600	
		BN300
COATED CARBIDE		EH10Z

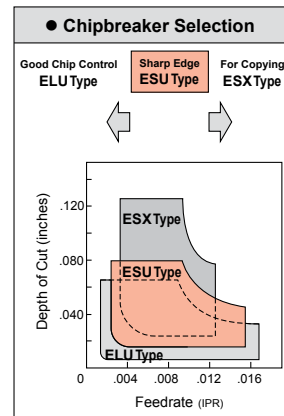
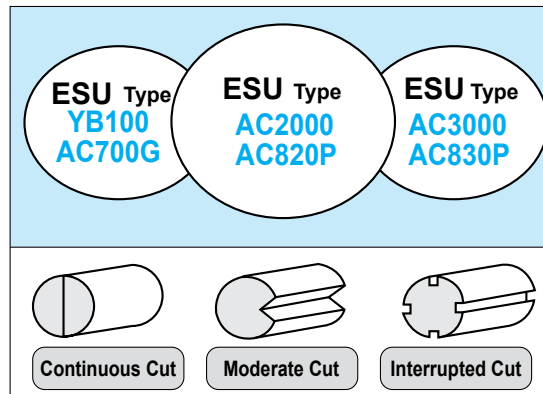
P
Steel

Steel

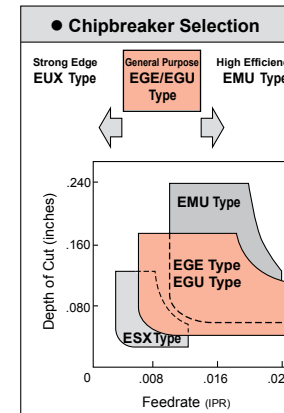
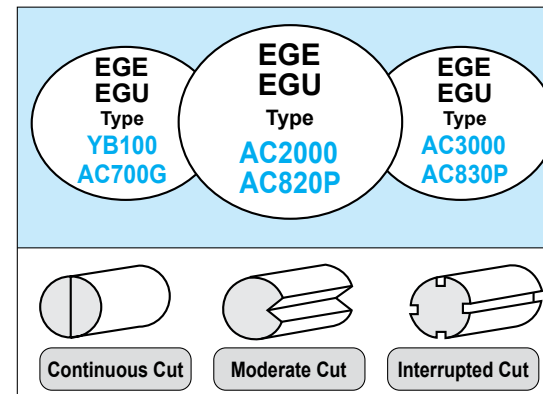
1 Fine Finishing



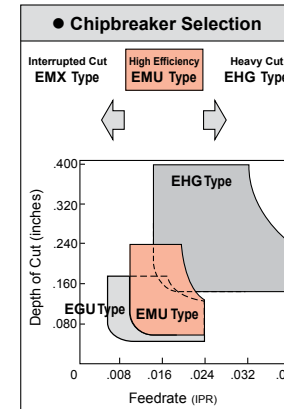
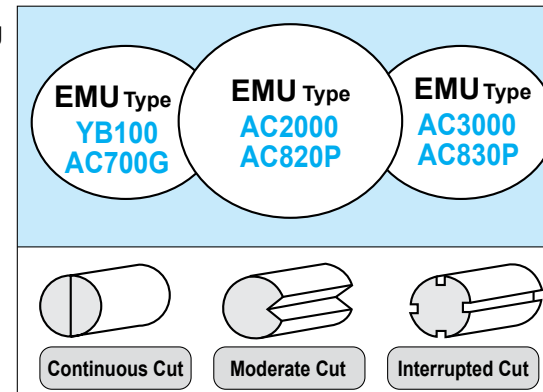
2 Finishing



3 Medium Cutting



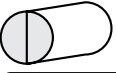
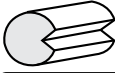
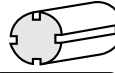
4 Roughing



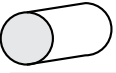
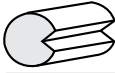
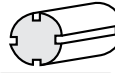
M
Stainless Steel

Stainless Steel

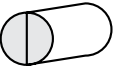
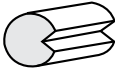
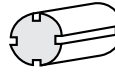
1 Finishing

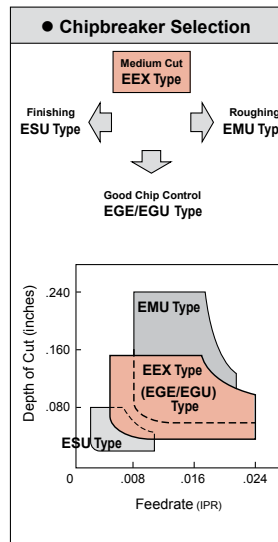
ESU Type AC610M	ESU Type AC630M	ESU Type AC3000 AC830P
		
Continuous Cut	Moderate Cut	Interrupted Cut

2 Medium Cut

EGU/EGE Type AC610M	EGU/EGE Type AC630M	EGU/EGE Type AC3000 AC830P
		
Continuous Cut	Moderate Cut	Interrupted Cut

3 Roughing

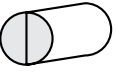
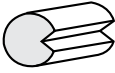
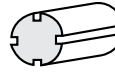
EMU Type AC610M	EMU Type AC630M	EMU Type AC830P AC520U
		
Continuous Cut	Moderate Cut	Interrupted Cut



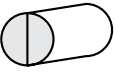
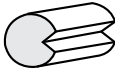
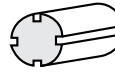
K
Cast Iron

Cast Iron

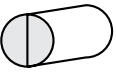
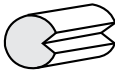
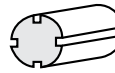
1 High Speed Finishing
() 2nd Choice

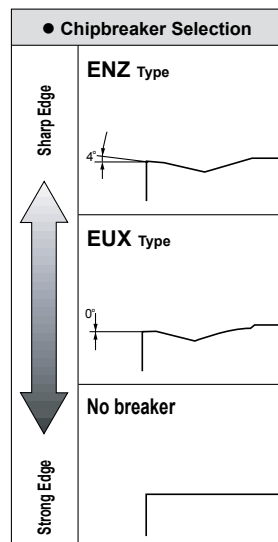
Gray	BN700 (BNS800)	
Ductile	BN500	
		
Continuous Cut	Moderate Cut	Interrupted Cut

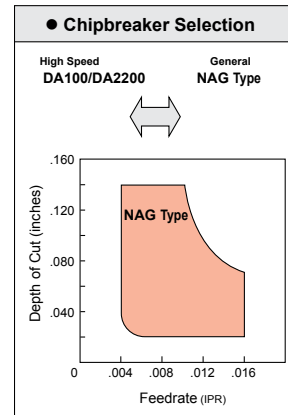
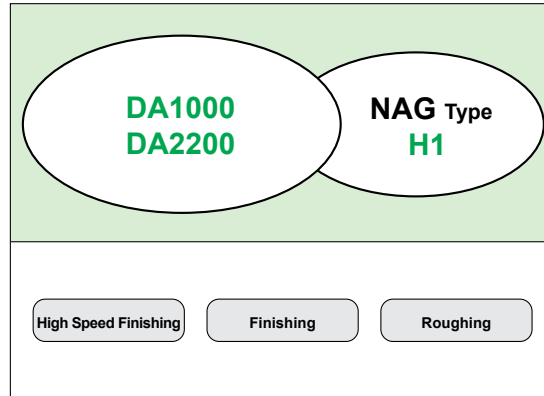
2 Finishing
~Medium Cut

ENZ Type AC410K	EUX Type AC410K	EUX Type YB100 AC700G
		
Continuous Cut	Moderate Cut	Interrupted Cut

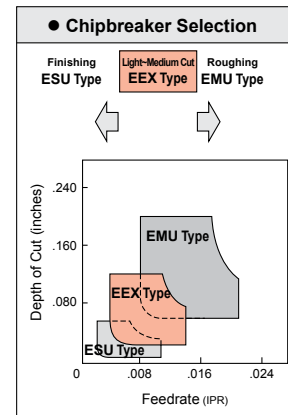
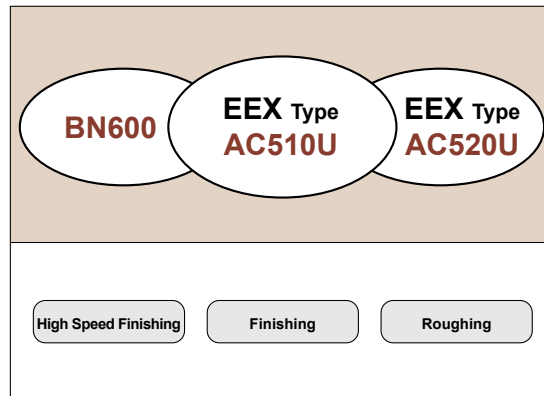
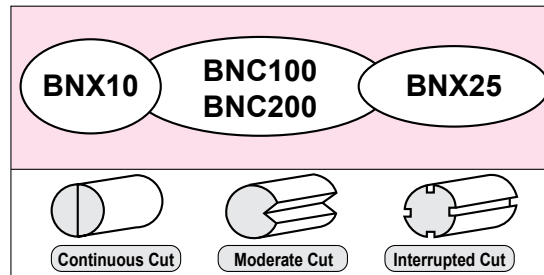
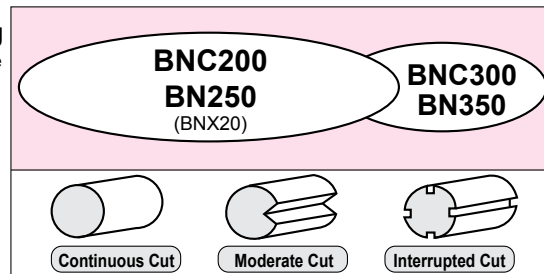
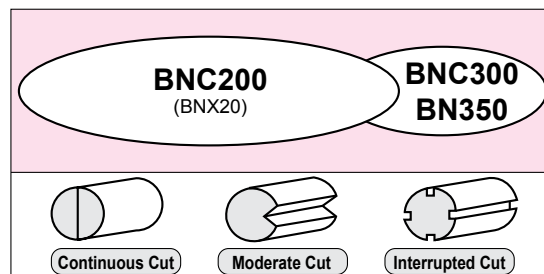
3 Roughing

ENZ Type AC410K	EUX Type YB100 AC700G	NO Breaker YB100 AC700G
		
Continuous Cut	Moderate Cut	Interrupted Cut



N
Non-Ferrous
MetalNon-Ferrous
Metal**S**
Exotic Metal

Exotic Metal

**H**
Hardened
SteelHardened
Steel**1** High
Speed
Finishing**2** Finishing
() 2nd Choice**3** High
Efficiency



SUMITOMO

CARBIDE - CBN - DIAMOND

1-800-950-5202

www.sumicarbide.com



Table of Contents

Indexable Inserts:	Pages
Negative Inserts	17-87
Positive Inserts	88-139
Swiss Tooling Inserts	140-141

80° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

CN

80° Diamond Type

Negative

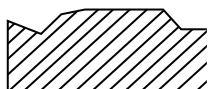
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

CNMG EFA

Rake Angle: 20°



Cutting Conditions:

Continuous Cut

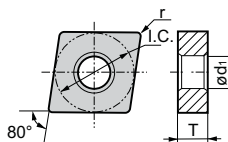
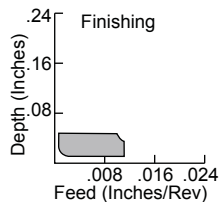
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



● ● ●
● ● ●
● ● ●
T2000Z
T3000Z
T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

CNMG 430.5 EFA

CNMG 120402N-FA

.500

.1875

.0156

.2031

CNMG 431 EFA

CNMG 120404N-FA

.500

.1875

.0156

.2031

CNMG 432 EFA

CNMG 120408N-FA

.500

.1875

.0313

.2031

CNMG EFL

Rake Angle: 10°



Cutting Conditions:

Continuous Cut

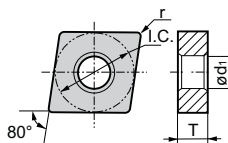
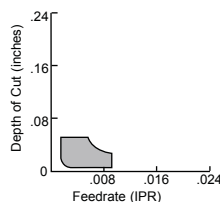
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000
AC820P
YB100

T2000Z
T3000Z

Sumitomo Catalog #

ISO Catalog #

I.C.

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ød1

CNMG 431 EFL

CNMG 120404N-FL

.500

.1875

.0156

.2031

CNMG 432 EFL

CNMG 120408N-FL

.500

.1875

.0313

.2031

CNMG EFP

Rake Angle: 10°



Cutting Conditions:

Continuous Cut

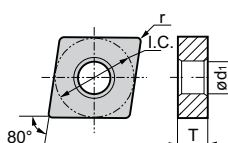
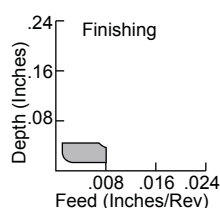
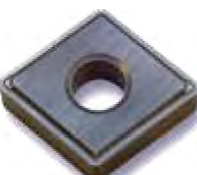
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



● ● ●
● ● ●
● ● ●
T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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ød1

CNMG 430.5 EFP

CNMG 120402N-FP

.500

.1875

.0156

.2031

CNMG 431 EFP

CNMG 120404N-FP

.500

.1875

.0156

.2031

CNMG 432 EFP

CNMG 120408N-FP

.500

.1875

.0313

.2031



CN

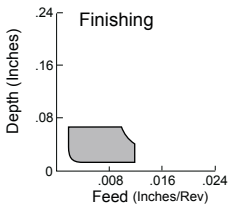
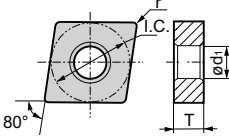
80° Diamond Type

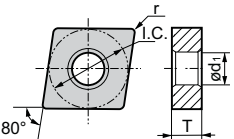
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMG ESP		Cutting Conditions:						Coated		Cermet		Uncoated			
Rake Angle: 13°		Continuous Cut								●					
		Medium Cut								●					
		Interrupted Cut								●					
  										T1200A					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
CNMG 431 ESP	CNMG 120404N-SP	.500	.1875	.0156	.2031										
CNMG 432 ESP	CNMG 120408N-SP			.0313											

CNMG ESU		Rake Angle: 13° 	Cutting Conditions:						Coated								Cermet		Uncoated						
			Continuous Cut																						
			Medium Cut																						
			Interrupted Cut																						
																									
Sumitomo Catalog #		ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC610M	AC630M	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z	T1200A	EH510			
CNMG 321 ESU	CNMG 090304N-SU		.375	.125	.0156	.150	★																		
CNMG 322 ESU	CNMG 090308N-SU				.0313		★																		
CNMG 331 ESU	CNMG 090404N-SU				.0156		★																		
CNMG 332 ESU	CNMG 090408N-SU				.0313		★																		
CNMG 430.5 ESU	CNMG 120402N-SU				.0078																				
CNMG 431 ESU	CNMG 120404N-SU		.500	.1875	.0156	.2031	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
CNMG 432 ESU	CNMG 120408N-SU				.0313		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
CNMG 433 ESU	CNMG 120412N-SU				.0469		★	●	●	●	●	●	●	●	●	●	●	★	●	●	●	●	●		



Negative Inserts

C

D

K

R

S

T

V

W

Swiss Tooling

CN

80° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMG ENK		Rake Angle: 10°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut		●	●	●			
				Medium Cut		●	●	●			
				Interrupted Cut		●	●	●			
		Depth (Inches) Feed (Inches/Rev)				AC2000	AC820P	T1200A			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
CNMG 431 ENK	CNMG 120404N-SK			.0156		●	●	●			
CNMG 432 ENK	CNMG 120408N-SK	.500	.1875	.0313	.2031	●	●	●			
CNMG 433 ENK	CNMG 120412N-SK			.0469		●	●	●			

CNMG ESX		Rake Angle: 3°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut		●	●	●	●		
				Medium Cut		●	●	●	●		
				Interrupted Cut		●	●	●	●		
		Depth (Inches) Feed (Inches/Rev)				AC2000	AC3000	AC820P	AC830P	AC700G	T2000Z
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
CNMG 431 ESX	CNMG 120404N-SX			.0156		●	●	●	●	●	★
CNMG 432 ESX	CNMG 120408N-SX	.500	.1875	.0313	.2031	●	●	●	●	●	★
CNMG 433 ESX	CNMG 120412N-SX			.0469		●	●	●	●	●	

CNMG EUU		Rake Angle: 10°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut		●					
				Medium Cut		●					
				Interrupted Cut		●					
		Depth (Inches) Feed (Inches/Rev)				AC2000					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
CNMG 321 EUU	CNMG 090304N-UU	.375	.125	.0156	.150	●					
CNMG 322 EUU	CNMG 090308N-UU			.0313		●					
CNMG 432 EUU	CNMG 120408N-UU	.500	.1875	.0313	.2031	●					
CNMG 433 EUU	CNMG 120412N-UU			.0469		●					



Negative
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

CN

80° Diamond Type

Negative

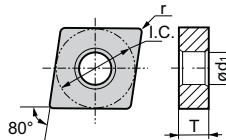
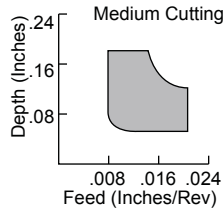
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMG EUX

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated

Cermet

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC410K	T1200A						
CNMG 321 EUX	CNMG 090304N-UX	.375	.125	.0156	.150	★													
CNMG 322 EUX	CNMG 090308N-UX			.0313		●													
CNMG 431 EUX	CNMG 120404N-UX			.0156		●	●	●	●	●		★							
CNMG 432 EUX	CNMG 120408N-UX			.0313		●	●	●	●	●	●	●		★					
CNMG 433 EUX	CNMG 120412N-UX	.500	.1875	.0469	.2031	●	●	●	●	●	●	●							
CNMG 434 EUX	CNMG 120416N-UX			.0625		●	●	●	●	●	●	★							
CNMG 542 EUX	CNMG 160608N-UX			.0313		●	●	●	●	★	●	●							
CNMG 543 EUX	CNMG 160612N-UX	.625	.250	.0469	.250	●	●	●	●	●	●	●							
CNMG 544 EUX	CNMG 160616N-UX			.0625		●	●	●	●	●	●	●							
CNMG 642 EUX	CNMG 190608N-UX			.0313		●	●	●	●	●	●	●							
CNMG 643 EUX	CNMG 190612N-UX	.750	.250	.0469	.3126	●	●	●	●	●	●	●							
CNMG 644 EUX	CNMG 190616N-UX			.0625		●	●	●	●	●	●	●							



80° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

CN

80° Diamond Type

Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMG ENG

Rake Angle: 4°



Cutting Conditions:

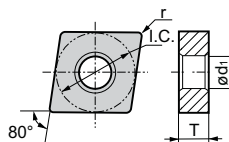
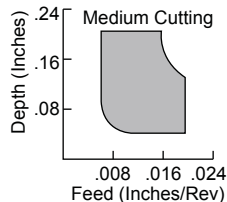
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Cermet



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC700G	EH10Z	EH20Z	T1200A
CNMG 321 ENG	CNMG 090304N-UG	.375	.125	.0156	.150	●	●				
CNMG 322 ENG	CNMG 090308N-UG			.0313		●	●				
CNMG 431 ENG	CNMG 120404N-UG			.0156		●	●	●	●		
CNMG 432 ENG	CNMG 120408N-UG			.0313		●	●	●	●		
CNMG 433 ENG	CNMG 120412N-UG	.500	.1875	.0469	.2031	●	●	●	●		●
CNMG 434 ENG	CNMG 120416N-UG			.0625		●	●	●			
CNMG 542 ENG	CNMG 160608N-UG			.0313		●	●				
CNMG 543 ENG	CNMG 160612N-UG	.625	.250	.0469	.250	●	●				
CNMG 544 ENG	CNMG 160616N-UG			.0625		●	●				
CNMG 642 ENG	CNMG 190608N-UG			.0313		●	●				
CNMG 643 ENG	CNMG 190612N-UG	.750	.250	.0469	.3126	●	●				
CNMG 644 ENG	CNMG 190616N-UG			.0625		●	●				
CNMG 646 ENG	CNMG 190624N-UG			.0938		●	●				

CNMG ENZ/FNZ

Rake Angle: 4°



Cutting Conditions:

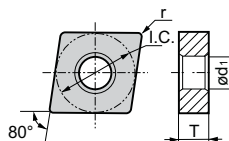
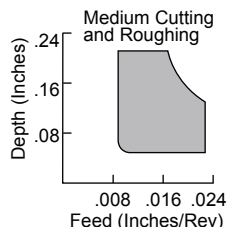
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC410K	AC300G	EH20Z	G10E
CNMG 432 ENZ	CNMG 120408N-UZ			.0313		●	●	●	●	●	●	▲	▲	
CNMG 432 ENZ-S	CNMG 120408N-UZ-S			.0313								●		
CNMG 433 ENZ	CNMG 120412N-UZ	.500	.1875	.0469	.2031	●	●	●	●	●	●	▲		
CNMG 433 ENZ-S	CNMG 120412N-UZ-S			.0469								●		
CNMG 542 ENZ	CNMG 160608N-UZ			.0313		●	●	●	●	●	●	▲		
CNMG 543 ENZ	CNMG 160612N-UZ	.625	.250	.0469	.250	●	●	●	●	●	●	▲		
CNMG 544 ENZ	CNMG 160616N-UZ			.0625		●	●	●	●	●	●			
CNMG 642 ENZ	CNMG 190608N-UZ			.0313		●	●	●	●	●	●			
CNMG 643 ENZ	CNMG 190612N-UZ	.750	.250	.0469	.3126	●	●	●	●	●	●	▲		
CNMG 644 ENZ	CNMG 190616N-UZ			.0625		●	●	●	●	●	●			
CNMG 432 FNZ	CNMG 120408N-UZ	.500	.1875	.0313	.2031									●



CN

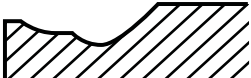
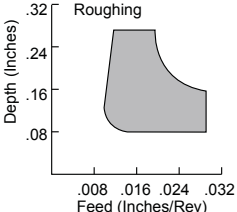
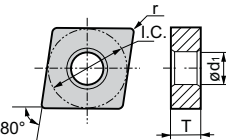
80° Diamond Type

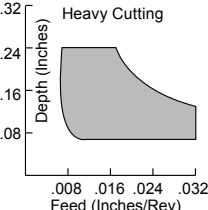
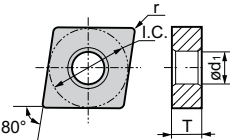
Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMG EMU	Rake Angle: 4° 	Cutting Conditions:						Coated														Uncoated		
		Continuous Cut																						
		Medium Cut																						
		Interrupted Cut																						
		Depth (Inches) Roughing  Feed (Inches/Rev)																						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC610M	AC630M	AC410K	AC300G	AC510U	AC520U	EH20Z	EH510Z	EH520Z	EH510	EH520		
CNMG 432 EMU	CNMG 120408N-MU	.500	.1875	.0313	.2031	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
CNMG 433 EMU	CNMG 120412N-MU					●	●	●	●	●	●	●	●	●	●	●	●	▲	●	●	●	●	●	●
CNMG 434 EMU	CNMG 120416N-MU					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CNMG 542 EMU	CNMG 160608N-MU	.625	.250	.0313	.250	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
CNMG 543 EMU	CNMG 160612N-MU					●	●	●	●	●	●	●	●	●	●	●	●	▲	●	●	●	●	●	●
CNMG 544 EMU	CNMG 160616N-MU					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CNMG 642 EMU	CNMG 190608N-MU	.750	.250	.0313	.3126	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
CNMG 643 EMU	CNMG 190612N-MU					●	●	●	●	●	●	●	●	●	●	●	●	▲	●	●	●	●	●	●
CNMG 644 EMU	CNMG 190616N-MU					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

CNMG EMX		Rake Angle: -15°		Cutting Conditions:						Coated												Uncoated															
				Continuous Cut																																	
				Medium Cut																																	
				Interrupted Cut																																	
										AC2000				AC3000				AC820P				AC830P															
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000				AC3000				AC820P				AC830P																	
CNMG 432 EMX		CNMG 120408N-MX		.500	.1875	.0313	.2031																														
CNMG 433 EMX		CNMG 120412N-MX				.0469																															
CNMG 434 EMX		CNMG 120416N-MX				.0625																															
CNMG 542 EMX		CNMG 160608N-MX		.625	.250	.0313	.250																														
CNMG 543 EMX		CNMG 160612N-MX				.0469																															
CNMG 544 EMX		CNMG 160616N-MX				.0625																															
CNMG 643 EMX		CNMG 190612N-MX		.750		.0469	.3126																														
CNMG 644 EMX		CNMG 190616N-MX				.0625																															



Negative
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

80° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

CN

80° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

CNMG FNU

Rake Angle: 10°



Cutting Conditions:

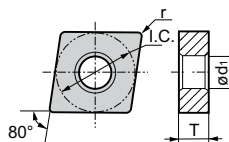
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

CNMG 432 FNU

CNMG 120408N-NU

.500

.1875

.0313

.2031

G10E

CNGG ESU

Rake Angle: 13°



Cutting Conditions:

Continuous Cut

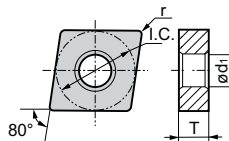
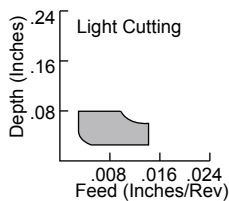
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

CNGG 430 ESU

CNGG 120401N-SU

.500

.1875

.0039

.2031

CNGG 430.5 ESU

CNGG 120402N-SU

.0078

CNGG 431 ESU

CNGG 120404N-SU

.0156

CNGG 432 ESU

CNGG 120408N-SU

.0313

AC510U
AC520U
EH520Z

T2000Z
T3000Z
T1200A



CN

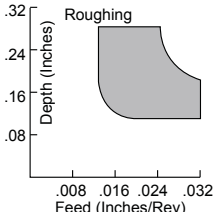
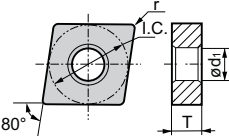
80° Diamond Type

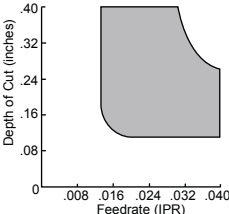
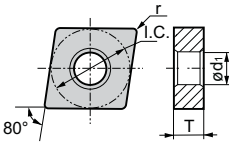
Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMM ENP		Rake Angle: 0°	Cutting Conditions:						Coated										Uncoated									
			Continuous Cut																									
			Medium Cut						 																			
			Interrupted Cut						 																			
															AC2000		AC3000											
Sumitomo Catalog #			ISO Catalog #			I.C.	T	r							ød1													
CNMM 432 ENP			CNMM 120408N-MP			.500	.1875	.0313	.2031	★	●																	
CNMM 433 ENP			CNMM 120412N-MP					.0469		★	★																	
CNMM 434 ENP			CNMM 120416N-MP					.0625		★	★																	
CNMM 542 ENP			CNMM 160608N-MP			.625		.0313	.250	★	★																	
CNMM 543 ENP			CNMM 160612N-MP					.0469		★	★																	
CNMM 544 ENP			CNMM 160616N-MP					.0625		★	★																	
CNMM 642 ENP			CNMM 190608N-MP			.750	.250	.0313	.3126	★	★																	
CNMM 643 ENP			CNMM 190612N-MP					.0469		★	●																	
CNMM 644 ENP			CNMM 190616N-MP					.0625		★	★																	
CNMM 646 ENP			CNMM 190624N-MP					.0938		★	★																	

CNMM EHG		Rake Angle: 0°		Cutting Conditions:						Coated						Cermet							
				Continuous Cut																			
				Medium Cut																			
				Interrupted Cut																			
																							
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G											
CNMM 432 EHG	CNMM 120408N-HG	.500	.1875	.0313	.2031	★	★	●	●	★													
CNMM 433 EHG	CNMM 120412N-HG			.0469		★	★	●	●	★													
CNMM 543 EHG	CNMM 160612N-HG			.0469		★	★	●	●	★													
CNMM 544 EHG	CNMM 160616N-HG	.625	.250	.0625	.250	★	★	●	●	★													
CNMM 643 EHG	CNMM 190612N-HG			.0469		★	★	●	●	★													
CNMM 644 EHG	CNMM 190616N-HG			.0625		★	★	●	●	★													
CNMM 646 EHG	CNMM 190624N-HG	.750		.0938	.3126	★	★																



Negative Inserts

C

D

K

R

S

T

V

W

Swiss Tooling

DN

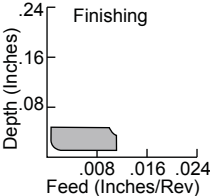
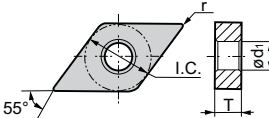
55° Diamond Type

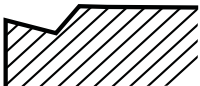
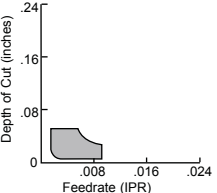
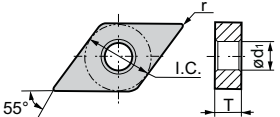
Negative

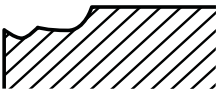
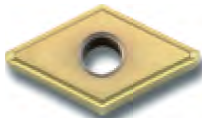
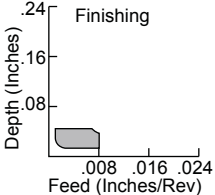
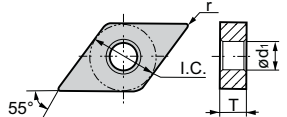
With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DNMG EFA		Rake Angle: 20°		Cutting Conditions:				Coated		Cermet		Uncoated					
																	
				Continuous Cut						 							
				Medium Cut						  							
				Interrupted Cut						 							
																	
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1			T2000Z	T3000Z	T1200A					
DNMG 431 EFA		DNMG 150404N-FA		.500	.1875	.0156	.2031			●	★	●					
DNMG 432 EFA		DNMG 150408N-FA			.0313						●	★	●				
DNMG 441 EFA		DNMG 150604N-FA			.0156						★						
DNMG 442 EFA		DNMG 150608N-FA			.0313								★				

DNMG EFL		Rake Angle: 10°	Cutting Conditions:						Coated		Cermet		Uncoated															
			Continuous Cut																									
			Medium Cut																									
			Interrupted Cut																									
															AC2000		AC820P		YB100		T2000Z		T3000Z					
Sumitomo Catalog #			ISO Catalog #			I.C.	T	r							ød1													
DNMG 431 EFL			DNMG 150404N-FL			.500	.1875	.0156	.2031																			
DNMG 432 EFL			DNMG 150408N-FL					.0313																				
DNMG 433 EFL			DNMG 150412N-FL					.0469																				

DNMG		Rake Angle: 10°	Cutting Conditions:						Coated	Cermet			Uncoated		
EFP			Continuous Cut												
			Medium Cut												
			Interrupted Cut												
									T1200A						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
DNMG 431 EFP	DNMG 150404N-FP	.500	.1875	.0156	.2031										
DNMG 432 EFP	DNMG 120408N-FP			.0313											



Negative Inserts

C

D

K

R

S

T

V

W

Swiss Tooling

DN

55° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DNMG		Rake Angle: 10°		Cutting Conditions:		Coated		Cermet		Uncoated	
ELU				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
						AC2000		T2000Z			
Sumitomo Catalog #		ISO Catalog #		I.C.		T		r		ød1	
DNMG 431 ELU		DNMG 150404N-LU		.500		.1875		.0156		.2031	
DNMG 432 ELU		DNMG 150408N-LU						.0313			
DNMG 433 ELU		DNMG 150412N-LU						.0469			

DNMG		Rake Angle: 10°		Cutting Conditions:		Coated		Cermet		Uncoated	
ENK				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
						AC2000		T1200A			
Sumitomo Catalog #		ISO Catalog #		I.C.		T		r		ød1	
DNMG 431 ENK		DNMG 150404N-SK		.500		.1875		.0156		.2031	
DNMG 432 ENK		DNMG 150408N-SK						.0313			
DNMG 441 ENK		DNMG 150604N-SK						.0156			
DNMG 442 ENK		DNMG 150608N-SK						.0313			



Negative
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN

55° Diamond Type

Negative

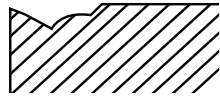
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

DNMG ESX

Rake Angle: 3°



Cutting Conditions:

Continuous Cut

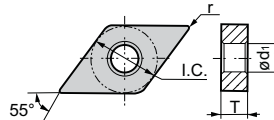
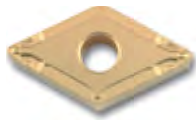
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	T2000Z	T3000Z	T1200A										
Continuous Cut	●	●	●	●	●	●	●	●	●										
Medium Cut	●	●	●	●	●	●	●	●	●										
Interrupted Cut	●	●	●	●	●	●	●	●	●										

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1														
DNMG 431 ESX	DNMG 150404N-SX			.0156															
DNMG 432 ESX	DNMG 150408N-SX		.1875	.0313															
DNMG 433 ESX	DNMG 150412N-SX			.0469															
DNMG 441 ESX	DNMG 150604N-SX	.500		.0156	.2031														
DNMG 442 ESX	DNMG 150608N-SX		.250	.0313															
DNMG 443 ESX	DNMG 150612N-SX			.0469															

DNMG EUU



Cutting Conditions:

Continuous Cut

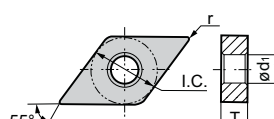
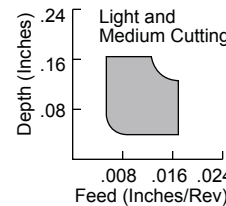
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



	AC2000																		
Continuous Cut	●																		
Medium Cut	●																		
Interrupted Cut	●																		

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1														
DNMG 331 EUU	DNMG 110404N-UU	.375		.0156	.150														
DNMG 332 EUU	DNMG 110408N-UU			.0313															
DNMG 431 EUU	DNMG 150404N-UU		.1875	.0156															
DNMG 432 EUU	DNMG 150408N-UU			.0313															
DNMG 433 EUU	DNMG 150412N-UU	.500		.0469	.2031														
DNMG 442 EUU	DNMG 150608N-UU			.0313															
DNMG 443 EUU	DNMG 150612N-UU			.0469															



DN

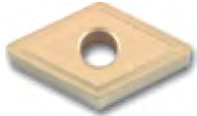
55° Diamond Type

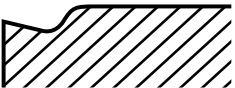
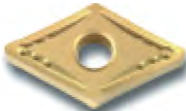
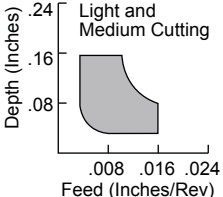
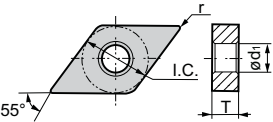
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DNMG ENJ		Cutting Conditions:						Coated	Cermet	Uncoated			
 Light Cutting Depth (Inches) .24 .16 .08 Feed (Inches/Rev) .008 .016 .024 55° I.C. r ød1 T		Continuous Cut						●	●				
		Medium Cut						●	●				
		Interrupted Cut						●	●				
								AC2000 AC820P					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
DNMG 431 ENJ	DNMG 150404N-UJ	.500	.1875	.0156	.2031	●	●						
DNMG 432 ENJ	DNMG 150408N-UJ			.0313		●	●						
DNMG 441 ENJ	DNMG 150604N-UJ			.0156		●	●						
DNMG 442 ENJ	DNMG 150608N-UJ		.250	.0313		●	●						

DNMG EUP		Rake Angle: 10°		Cutting Conditions:						Coated						Uncoated												
				Continuous Cut																								
				Medium Cut																								
				Interrupted Cut																								
																												
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC510U	AC520U	EH510Z	EH10Z	EH20Z							G10E	EH510				
DNMG 431 EUP		DNMG 150404N-UP		.500	.1875	.0156	.2031	●	●	●	●	●	●		●	●							●					
DNMG 432 EUP		DNMG 150408N-UP				.0313		●	●	●	●	●	●	●	★	●	●							●	★			
DNMG 433 EUP		DNMG 150412N-UP				.0469		●	●	●	●	●	●	●	●	●	▲											



Negative
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

With Insert Hole

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

K

Swiss Tooling

DN

55° Diamond Type

Negative

With Insert Hole

P Steel

M Stainless Steel

K Cast Iron

N Non-ferrous

S Exotic Materials

Hardened Steel

- USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

DNMG ENG

Rake Angle: 4°

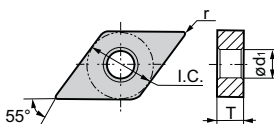
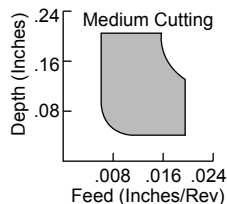


Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

[illegible]

DNMG
ENZ/FNZ

Rake Angle: 4°

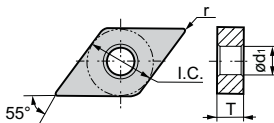
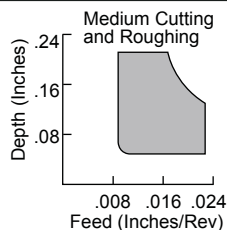
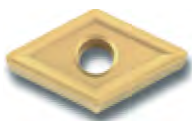


Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut



Coated												Uncoated				
																
																
																
AC2000																
AC3000																
AC820P																
AC830P																
AC700G																
AC410K																
AC300G																

DN

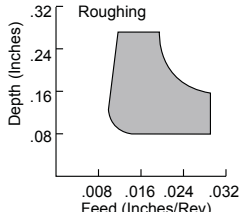
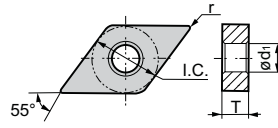
55° Diamond Type

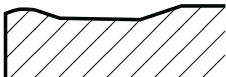
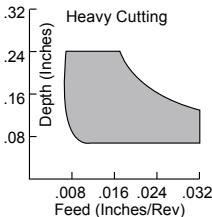
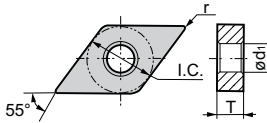
Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DNMG EMU		Rake Angle: 4°		Cutting Conditions:						Coated										Uncoated			
																							
				Continuous Cut																			
				Medium Cut																			
				Interrupted Cut																			
																							
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC630M	AC300G	AC510U	AC520U	EH510Z	EH520Z	EH520			
DNMG 432 EMU		DNMG 150408N-MU		.500	.1875	.0313	.2031	●	●	●	●	●	●	●	▲	●	●	●	●		●		
DNMG 433 EMU		DNMG 150412N-MU				.0469		●	●	●	●	●	●	●	●	●	▲	●	●	●	●		●
DNMG 434 EMU		DNMG 150416N-MU				.0625		★	●	●	●	●	●	●	●	●	●	●	●	●	●		
DNMG 442 EMU		DNMG 150608N-MU			.0313	●		●	★	★	●	●	●	●	●	●	●	●	●	●			
DNMG 443 EMU		DNMG 150612N-MU			.0469	●		●	★	★	●	●	●	●	●	●	●	●	●	●	●		
DNMG 444 EMU		DNMG 150616N-MU				.0625		★				●											

DNMG EMX		Rake Angle: -15° 	Cutting Conditions:						Coated										Uncoated															
									Continuous Cut																									
Sumitomo Catalog #		ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P																								
DNMG 432 EMX		DNMG 150408N-MX	.500	.1875	.0313	.2031	●	●	●	●																								
DNMG 433 EMX		DNMG 150412N-MX			.0469		●	●	●	●	●	●																						
DNMG 434 EMX		DNMG 150416N-MX			.0625		●	●	●	●	●	●																						
DNMG 442 EMX		DNMG 150608N-MX		.0313	●		●	●	●	●	●																							
DNMG 443 EMX		DNMG 150612N-MX		.250	.0469		●	●	●	●	●																							



Negative Inserts

C

D

K

R

S

T

V

W

Swiss Tooling

55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN

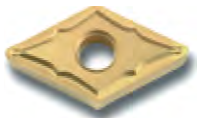
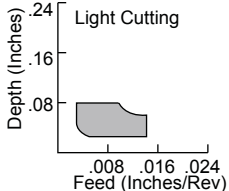
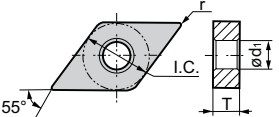
55° Diamond Type

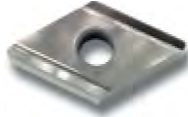
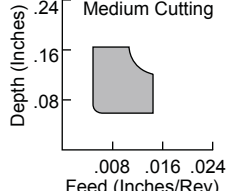
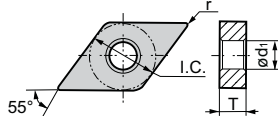
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

DN GG ESU		Rake Angle: 13°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
						AC520U EH520Z		T2000Z T3000Z			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
DN GG 430 ESU	DN GG 150401N-SU	.500	.1875	.0039	.2031	●	●				
DN GG 430.5 ESU	DN GG 150402N-SU			.0078		●	●	●	●		
DN GG 431 ESU	DN GG 150404N-SU			.0156		●	●	●	★		
DN GG 432 ESU	DN GG 150408N-SU			.0313		●	●	●	★		

DN JG UM		Rake Angle: 14°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
								T1200A			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
DN JG 431 L	DN GG 150404L-UM	.500	.1875	.0156	.2031			●			
DN JG 431 R	DN GG 150404R-UM			.0313				●			
DN JG 432 L	DN GG 150408L-UM			.0156				●			
DN JG 432 R	DN GG 150408R-UM			.0313				●			



55° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

DN

55° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

DNMA

No Breaker



Cutting Conditions:

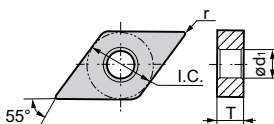
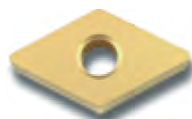
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC700G

AC410K

AC300G

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

DNMA 431

DNMA 150404

.500

.1875

.0313

.2031

DNMA 432

DNMA 150408

.500

.1875

.0313

.2031

DNMA 432-S

DNMA 150408-S

.500

.1875

.0313

.2031

DNMA 433

DNMA 150412

.500

.1875

.0469

.2031

DNMA 433-S

DNMA 150412-S

.500

.1875

.0469

.2031

DNMA 442

DNMA 150608

.250

.250

.0313

.2031

DNMA 443

DNMA 150612

.250

.250

.0469

.2031

★

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ROUND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

RN

Round Type

Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

RNMG ENT

Rake Angle: 0°



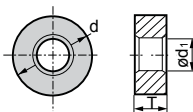
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated



AC3000

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
RNMG 43 ENT		.500	.1875	-	.2031

RNMG ENU

Rake Angle: 0°



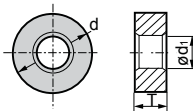
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated



AC3000

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
RNMG 54 ENU		.625	.250	-	.250

RNMG ENV

Rake Angle: 0°



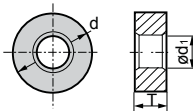
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated



AC3000

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
RNMG 64 ENV		.750	.250	-	.3126



RN

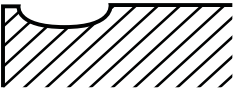
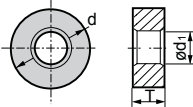
Round Type

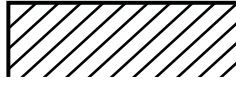
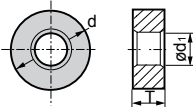
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

RNMG ENY		Rake Angle: 0°		Cutting Conditions:		Coated	Cermet	Uncoated			
				Continuous Cut							
				Medium Cut		●					
				Interrupted Cut		●					
						AC3000					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
RNMG 32 ENY		.375	.185	-	.150						
RNMG 84 ENY		1.00	.250	-	.3622						
RNMG 86 ENY			.375	-		●					

RNMA		No Breaker		Cutting Conditions:		Coated	Cermet	Uncoated			
				Continuous Cut		● ● ●					
				Medium Cut		● ● ●					
				Interrupted Cut		●					
						AC700G AC410K AC300G					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
RNMA 43		.500	.1875	-	.2031						
						● ● ▲					



SQUARE TYPE NEGATIVE INSERT

Indexable Inserts for Turning

SN

Square Type

Negative

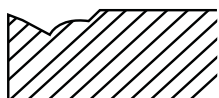
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

SNMG ESX

Rake Angle: 3°



Cutting Conditions:

Continuous Cut

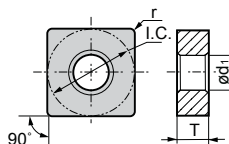
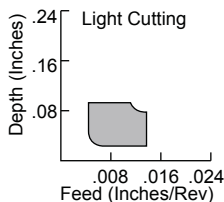
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Coated	Cermet	Uncoated
AC2000	T2000Z	
AC3000	T3000Z	
AC820P		
AC830P		
AC700G	T1200A	

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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SNMG 431 ESX	SNMG 120404N-SX	.500	.1875	.0156	.2031
SNMG 432 ESX	SNMG 120408N-SX			.0313	
SNMG 433 ESX	SNMG 120412N-SX			.0469	

SNMG EUU



Cutting Conditions:

Continuous Cut

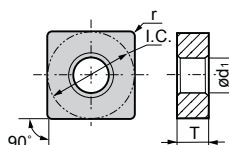
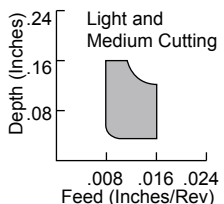
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Coated	Cermet	Uncoated
AC2000		

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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ød1

SNMG 432 EUU	SNMG 120408N-UU	.500	.1875	.0313	.2031
SNMG 433 EUU	SNMG 120412N-UU			.0469	

SNMG ENJ



Cutting Conditions:

Continuous Cut

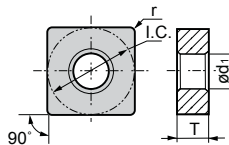
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Coated	Cermet	Uncoated
AC2000		
AC3000		
AC820P		
AC830P		

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

SNMG 321 ENJ	SNMG 090304N-UJ	.375	.125	.0156	.150
SNMG 322 ENJ	SNMG 090308N-UJ			.0313	
SNMG 431 ENJ	SNMG 120404N-UJ			.0156	
SNMG 432 ENJ	SNMG 120408N-UJ	.500	.1875	.0313	.2031
SNMG 433 ENJ	SNMG 120412N-UJ			.0469	



SQUARE TYPE NEGATIVE INSERT

Indexable Inserts for Turning

SN

Square Type

Negative

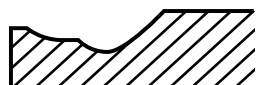
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

SNMG EMU

Rake Angle: 4°



Cutting Conditions:

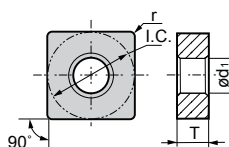
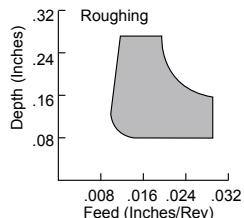
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated

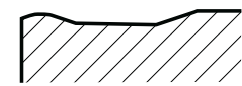


	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC630M	AC300G	AC510U	AC520U	EH20Z	EH510Z	EH520Z	EH520
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
SNMG 432 EMU	SNMG 120408N-MU			.0313	
SNMG 433 EMU	SNMG 120412N-MU	.500	.1875	.0469	.2031
SNMG 434 EMU	SNMG 120416N-MU			.0625	
SNMG 543 EMU	SNMG 160612N-MU			.0469	
SNMG 544 EMU	SNMG 160616N-MU	.625	.250	.0625	.250
SNMG 643 EMU	SNMG 190612N-MU			.0469	
SNMG 644 EMU	SNMG 190616N-MU	.750		.0625	.3126

SNMG EMX

Rake Angle: -15°



Cutting Conditions:

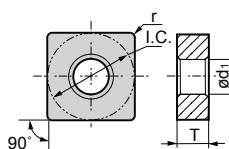
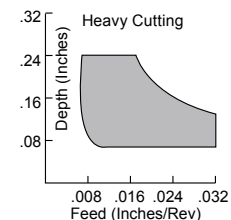
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



	AC2000	AC3000	AC820P	AC830P
Continuous Cut	●	●	●	●
Medium Cut	●	●	●	●
Interrupted Cut	●	●	●	●

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
SNMG 432 EMX	SNMG 120408N-MX			.0313	
SNMG 433 EMX	SNMG 120412N-MX	.500	.1875	.0469	.2031
SNMG 434 EMX	SNMG 120416N-MX			.0625	
SNMG 543 EMX	SNMG 150612N-MX			.0469	
SNMG 544 EMX	SNMG 150616N-MX	.625	.250	.0625	.250
SNMG 643 EMX	SNMG 190612N-MX			.0469	
SNMG 644 EMX	SNMG 190616N-MX	.750		.0625	.3126



SN

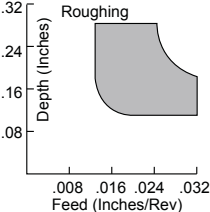
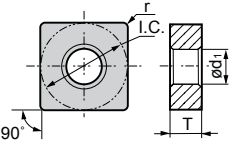
Square Type

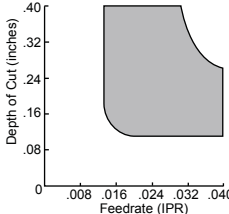
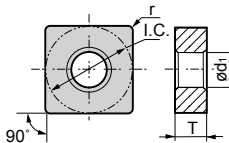
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SNMM ENP		Rake Angle: 0°	Cutting Conditions:					Coated										Uncoated									
			Continuous Cut																								
			Medium Cut					 																			
			Interrupted Cut					 																			
								AC2000	AC3000																		
Sumitomo Catalog #	ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000																			
SNMM 432 ENP	SNMM 120408N-MP		.500	.1875	.0313	.2031	★	●																			
SNMM 433 ENP	SNMM 120412N-MP				.0469		●	★																			
SNMM 434 ENP	SNMM 120416N-MP				.0625		★	★																			
SNMM 643 ENP	SNMM 190612N-MP		.750	.250	.0469	.3126	●	●																			
SNMM 644 ENP	SNMM 190616N-MP				.0625		★	●																			
SNMM 856 ENP	SNMM 190624N-MP				.0938		.3622	★	★																		

SNMM EHG		Rake Angle: 0°		Cutting Conditions:				Coated				Cermet			
				Continuous Cut											
				Medium Cut											
				Interrupted Cut											
															
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P				
SNMM 432 EHG		SNMM 120408N-HG		.500	.1875	.0313	.2031	★	★	●	●				
SNMM 433 EHG		SNMM 120412N-HG				.0469		★	★	●	●				
SNMM 434 EHG		SNMM 120416N-HG				.0625		★	★	●	●				
SNMM 643 EHG		SNMM 190612N-HG		.750	.250	.0469	.3126	★	★	●	●				
SNMM 644 EHG		SNMM 190616N-HG				.0625		★	★	●	●				
SNMM 646 EHG		SNMM 190624N-HG				.0938		★	★	●	●				



Negative
Inserts

C

D

K

R

S

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Swiss
Tooling

SQUARE TYPE NEGATIVE INSERT

Indexable Inserts for Turning

SN

Square Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

SNMM EHP

Rake Angle: 0°



Cutting Conditions:

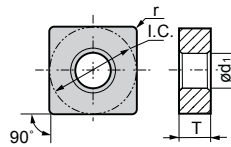
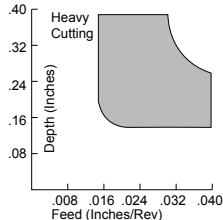
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC2000

AC3000

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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ød1

AC2000

AC3000

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	Coated	Uncoated
SNMM 432 EHP	SNMM 120408N-HP			.0313		★	★		
SNMM 433 EHP	SNMM 120412N-HP	.500	.1875	.0469	.2031	★	★		
SNMM 434 EHP	SNMM 120416N-HP			.0625			★		
SNMM 643 EHP	SNMM 190612N-HP			.0469		★	●		
SNMM 644 EHP	SNMM 190616N-HP	.750	.250	.0625	.3126	★	★		
SNMM 856 EHP	SNMM 250724N-HP			.0938		★	●		
SNMM 866 EHP	SNMM 250924N-HP	1.00	.375	.0938	.3622	●	●		

SNMA

No Breaker



Cutting Conditions:

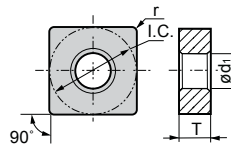
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC700G

AC410K

AC300G

Sumitomo Catalog #

ISO Catalog #

I.C.

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AC700G

AC410K

AC300G

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC700G	AC410K	AC300G	Coated	Uncoated
SNMA 322	SNMA 090308	.375	.125	.0313	.150	●	●	▲		
SNMA 431	SNMA 120404			.0156		★	★			
SNMA 432	SNMA 120408			.0313		●	●	▲		
SNMA 432-S	SNMA 120408-S			.0313			●	●		
SNMA 433	SNMA 120412	.500	.1875	.0469	.2031	●	●	▲		
SNMA 433-S	SNMA 120412-S			.0469			●	●		
SNMA 434	SNMA 120416			.0625		●	●	▲		
SNMA 435	SNMA 120420			.0781		★	★			
SNMA 543	SNMA 150612	.625	.250	.0469	.250	●	●	▲		
SNMA 644	SNMA 190616	.750	.250	.0625	.3126	●	●	▲		



SN

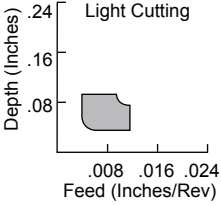
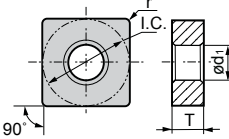
Square Type

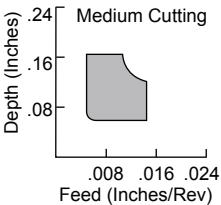
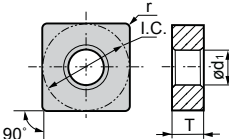
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SNP_{R/L}		Rake Angle: 0°		Cutting Conditions:		Coated	Cermet		Uncoated	
T				Continuous Cut			●	●	●	
				Medium Cut			●	●	●	●
				Interrupted Cut			●		●	
							T2000Z	T1200A	ST20E	G10E
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1					
SNPR 321 T	SNGG 090304R-ST			.0156			●	●	★	
SNPL 321 T	SNGG 090304L-ST			.0156			●	●	★	
SNPR 322 T	SNGG 090308R-ST	.375	.125	.0313	.150		●	●	★	★
SNPL 322 T	SNGG 090308L-ST			.0313			●	●	★	★
SNPR 323 T	SNGG 090312R-ST			.0469			●	●		

SNP_{R/L}		Rake Angle: 14°		Cutting Conditions:		Coated	Cermet		Uncoated	
M				Continuous Cut			●	●	●	
				Medium Cut			●	●	●	●
				Interrupted Cut			●		●	
							T2000Z	T1200A	ST20E	A30
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1					
SNPR 431 M	SNGG 120404R-UM			.0156			●	●	★	
SNPL 431 M	SNGG 120404L-UM			.0156				★	★	
SNPR 432 M	SNGG 120408R-UM	.500	.1875	.0313	.2031		●	●	★	★
SNPL 432 M	SNGG 120408L-UM			.0313			●	●	★	★
SNPR 433 M	SNGG 120412R-UM			.0469			●			
SNPL 433 M	SNGG 120412L-UM			.0469			●			

Negative Inserts

C

D

K

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Swiss Tooling



SQUARE TYPE NEGATIVE INSERT

Indexable Inserts for Turning

SN

Square Type

Negative

Without Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

SNMN

No Breaker



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated
Continuous Cut	Continuous Cut	Continuous Cut
Medium Cut	Medium Cut	Medium Cut
Interrupted Cut	Interrupted Cut	Interrupted Cut
AC700G	T1200A	ST20E A30 G10E
★	★	★
★		★
★		★
		★

Sumitomo Catalog #

ISO Catalog #

I.C.

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SNMN 432

SNMN 120408

.500

.1875

.0313

SNMN 433

SNMN 120412

.500

.1875

.0469

SNMN 434

SNMN 120416

.500

.1875

.0625

SNMN 532

SNMN 150408

.625

.250

.0313

SNG

No Breaker



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated
Continuous Cut	Continuous Cut	Continuous Cut
Medium Cut	Medium Cut	Medium Cut
Interrupted Cut	Interrupted Cut	Interrupted Cut
	T1200A	
	★	

Sumitomo Catalog #

ISO Catalog #

I.C.

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SNG 432

SNGN 120408

.500

.1875

.0313

-



TN

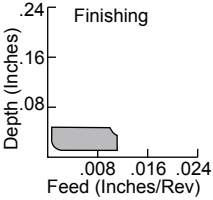
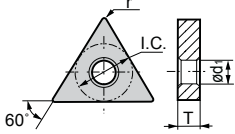
Triangular Type

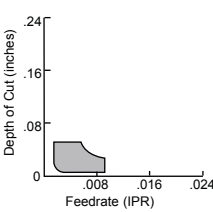
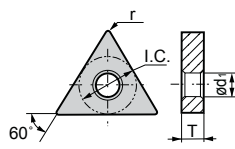
Negative

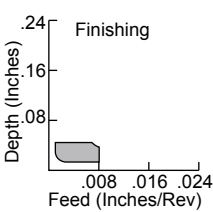
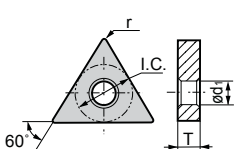
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNMG EFA		Cutting Conditions:					Coated	Cermet			Uncoated				
Rake Angle: 20°															
		Continuous Cut						●	●						
		Medium Cut						●	●	●					
		Interrupted Cut							●	●					
															
															
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1			T2000Z	T3000Z	T1200A					
TNMG 330.5 EFA	TNMG 160402N-FA			.0078				●	●						
TNMG 331 EFA	TNMG 160404N-FA	.375	.1875	.0156	.150			●	★	●					
TNMG 332 EFA	TNMG 160408N-FA			.0313				●	★	●					

TNMG EFL		Cutting Conditions:					Coated	Cermet			Uncoated				
Rake Angle: 10°															
		Continuous Cut					●	●							
		Medium Cut					●	●	●						
		Interrupted Cut					●	●	●						
															
															
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1		AC2000	AC820P	T2000Z	T3000Z					
TNMG 331 EFL	TNMG 160404N-FL	.375	.1875	.0156	.150		●	●	●	★					
TNMG 332 EFL	TNMG 160408N-FL			.0313			●	●	●						

TNMG EFP		Cutting Conditions:					Coated	Cermet			Uncoated				
Rake Angle: 10°															
		Continuous Cut						●							
		Medium Cut						●							
		Interrupted Cut						●							
															
															
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1				T1200A						
TNMG 322 EFP	TNMG 160308N-FP	.375	.125	.0313	.150				●						
TNMG 332 EFP	TNMG 160408N-FP		.1875	.0313					●						



Negative Inserts

C

D

K

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Swiss Tooling

TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN

Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TNMG

ESP

Rake Angle: 13°



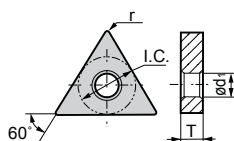
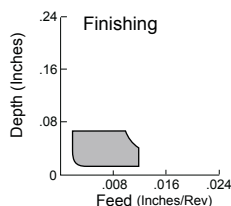
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated				Cermet				Uncoated			
				●							
				●							
				●							



Sumitomo Catalog #

ISO Catalog #

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TNMG 331 ESP	TNMG 160404N-SP	.375	.1875	.0156	.150
TNMG 332 ESP	TNMG 160408N-SP		.0313		

TNMG

ESU

Rake Angle: 13°



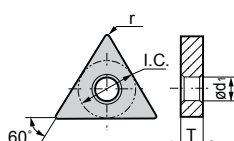
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated				Cermet			
●	●	●	●	●	●		
●	●	●	●	●	●		
●	●	●	●	●	●		



Sumitomo Catalog #

ISO Catalog #

I.C.

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TNMG 321 ESU	TNMG 160304N-SU			.0156	
TNMG 322 ESU	TNMG 160308N-SU		.125	.0313	
TNMG 323 ESU	TNMG 160312N-SU			.0469	
TNMG 331 ESU	TNMG 160404N-SU	.375		.0156	.150
TNMG 332 ESU	TNMG 160408N-SU			.0313	
TNMG 333 ESU	TNMG 160412N-SU			.0469	
TNMG 431 ESU	TNMG 220404N-SU		.1875	.0156	
TNMG 432 ESU	TNMG 220408N-SU	.500		.0313	.2031
TNMG 433 ESU	TNMG 220412N-SU			.0469	



TN

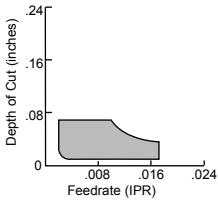
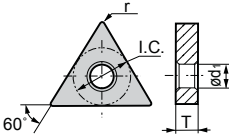
Triangular Type

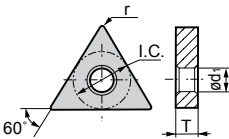
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNMG ELU		Cutting Conditions:						Coated			Cermet			Uncoated		
Rake Angle: 10°																
		Continuous Cut						●	●	●	●	●				
		Medium Cut						●	●	●	●	●				
		Interrupted Cut						●	●	●	●	●				
  								AC2000	AC3000	AC820P	AC700G	T2000Z	T3000Z	T1200A		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1											
TNMG 331 ELU	TNMG 160404N-LU	.375	.1875	.0156	.150	●	★	●	●	●	●	●	●	●		
TNMG 332 ELU	TNMG 160408N-LU			.0313		●	★	●	●	●	●	●	●	●		
TNMG 333 ELU	TNMG 160412N-LU			.0469		●	★	●	●	●	●	●	●	●		

TNMG ENK		Cutting Conditions:						Coated			Cermet			Uncoated		
Rake Angle: 10°																
		Continuous Cut						●	●		●					
		Medium Cut						●	●		●					
		Interrupted Cut						●	●		●					
  								AC2000	AC820P		T1200A					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1											
TNMG 221 ENK	TNMG 110304N-SK	.250	.125	.0156	.089	●	●									
TNMG 321 ENK	TNMG 160304N-SK			.0156		●	●				●					
TNMG 322 ENK	TNMG 160308N-SK			.0313		●	●				●					
TNMG 331 ENK	TNMG 160404N-SK	.375	.1875	.0156	.150	●	●				●					
TNMG 332 ENK	TNMG 160408N-SK			.0313		●	●				●					
TNMG 431 ENK	TNMG 220404N-SK			.0156		●	●				●					
TNMG 432 ENK	TNMG 220408N-SK	.500		.0313	.2031	●	●				●					



TN

Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNMG ENJ/FNJ		Cutting Conditions:						Coated	Cermet	Uncoated			
		Continuous Cut						●	●				
		Medium Cut						●	●	●			
		Interrupted Cut						●	●	●			
								AC2000	AC3000	AC820P			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
TNMG 221 ENJ	TNMG 110304N-UJ	.250	.125	.0156	.089	●	●	●					
TNMG 222 ENJ	TNMG 110308N-UJ			.0313		●	●	●					
TNMG 321 ENJ	TNMG 160304N-UJ			.0156		●	●	●					
TNMG 322 ENJ	TNMG 160308N-UJ			.0313		●	●	●					
TNMG 331 ENJ	TNMG 160404N-UJ	.375		.0156	.150	●	●	●					
TNMG 332 ENJ	TNMG 160408N-UJ			.0313		●	●	●					
TNMG 333 ENJ	TNMG 160412N-UJ		.1875	.0469		●	●	●					
TNMG 431 ENJ	TNMG 220404N-UJ			.0156		●	●	●					
TNMG 432 ENJ	TNMG 220408N-UJ	.500		.0313	.2031	●	●	●					
TNMG 433 ENJ	TNMG 220412N-UJ			.0469		●	●	●					
TNMG 431 FNJ*	TNMG 220404N-UJ	.500	.1875	.0156	.2031	●	●	●					

*FNJ chipbreaker is the same as ENJ

TNMG ENA		Cutting Conditions:						Coated	Cermet	Uncoated			
Rake Angle: 0° 		Continuous Cut						●					
		Medium Cut						●					
		Interrupted Cut											
								AC720					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
TNMG 433 ENA	TNMG 220412N-UA	.500	.1875	.0469	.2031	●							



TN

Triangular Type

Negative

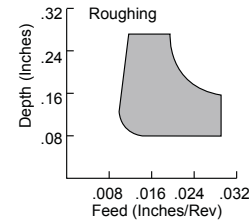
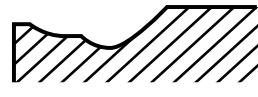
With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNMG EMU

Rake Angle: 4°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

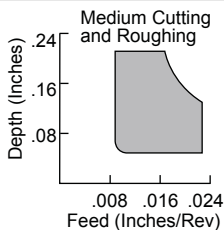
Coated

Uncoated

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC630M	AC300G	AC510U	AC520U	EH510Z	EH520Z				
TNMG 332 EMU	TNMG 160408N-MU	.375		.0313	.150	●	●	●	●	●	●	●	▲	●	●	●	●				
TNMG 333 EMU	TNMG 160412N-MU			.0469		●	●	●	●	●	●	●	▲	●	●	●	●				
TNMG 432 EMU	TNMG 220408N-MU		.1875	.0313		●	●	●	●	●	●	●	●	●	●	●	●				
TNMG 433 EMU	TNMG 220412N-MU	.500		.0469	.2031	●	●	●	●	●	●	●	▲	●	●	●	●				
TNMG 434 EMU	TNMG 220416N-MU			.0625		●	●	●	●	●	●	●	●	●	●	●	●				
TNMG 543 EMU	TNMG 270612N-MU	.625	.250	.0469	.250	●	●	●	●	●	●	●	▲	●	●	●	●				
TNMG 544 EMU	TNMG 270616N-MU			.0625		●	●	●	●	●	●	●	●	●	●	●	●				

TNMG ENZ/FNZ

Rake Angle: 4°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC410K	AC300G								
TNMG 322 ENZ	TNMG 160308N-UZ		.125	.0313	.150	●	●	●	●	●	●	●								
TNMG 323 ENZ	TNMG 160312N-UZ	.375		.0469		●	●	●	●	●	●	●								
TNMG 332 ENZ	TNMG 160408N-UZ			.0313		●	●	●	●	●	●	●	▲							
TNMG 333 ENZ	TNMG 160412N-UZ			.0469		●	●	●	●	●	●	●	▲							
TNMG 432 ENZ	TNMG 220408N-UZ		.1875	.0313		●	●	●	●	●	●	●	▲							
TNMG 433 ENZ	TNMG 220412N-UZ	.500		.0469	.2031	●	●	●	●	●	●	●	▲							
TNMG 434 ENZ	TNMG 220416N-UZ			.0625		●	●	●	●	●	●	●	●							
TNMG 444 ENZ	TNMG 220616N-UZ			.0625		●	●	●	●	●	●	●	●							
TNMG 542 ENZ	TNMG 270608N-UZ			.0313		●	●	●	●	●	●	●	●							
TNMG 543 ENZ	TNMG 270612N-UZ	.625	.250	.0469	.250	●	●	●	●	●	●	●	▲							
TNMG 544 ENZ	TNMG 270616N-UZ			.0625		●	●	●	●	●	●	●	●							
TNMG 548 ENZ	TNMG 270632N-UZ			.125		●	●	●	●	●	●	●	●							
TNMG 666 ENZ	TNMG 330924N-UZ	.750	.375	.0938	.3126	●	●	●	●	●	●	●	●							
TNMG 432 FNZ	TNMG 220408N-UZ	.500	.1875	.0313	.2031													●		
TNMG 542 FNZ	TNMG 270608N-UZ	.625	.250	.0313	.250													▲		



Negative
Inserts

C

D

K

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V

W

Swiss
Tooling

TRIANGULAR TYPE NEGATIVE INSERT

Indexable Inserts for Turning

TN

Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

TNMG EMX

Rake Angle: -15°



Cutting Conditions:

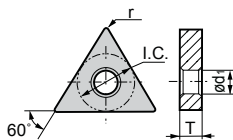
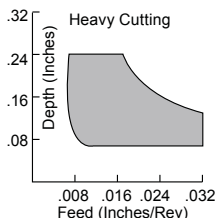
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC2000
AC3000
AC820P
AC830P

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

TNMG 332 EMX

TNMG 160408N-MX

.375

.1875

.0313

.150

TNMG 333 EMX

TNMG 160412N-MX

.375

.1875

.0469

.150

TNMG 432 EMX

TNMG 220408N-MX

.500

.1875

.0313

.2031

TNMG 433 EMX

TNMG 220412N-MX

.500

.1875

.0469

.2031

TNMG ENV

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

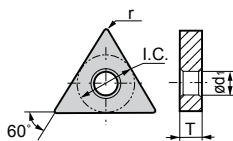
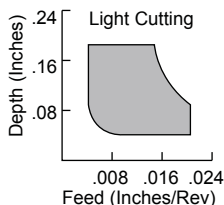
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC3000

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

TNMG 436 ENV

TNMG 220424N-NV

.500

.1875

.0938

.2031



TN

Triangular Type

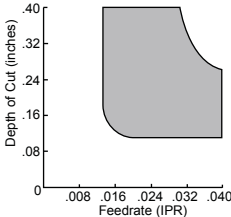
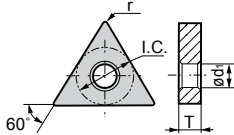
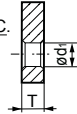
Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNMM ENP		Rake Angle: 0°		Cutting Conditions:						Coated										Uncoated																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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TNMM EHG		Rake Angle: 0°		Cutting Conditions:						Coated						Cermet					
				Continuous Cut																	
				Medium Cut																	
				Interrupted Cut																	
																					
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P										
TNMM 432 EHG		TNMM 220408N-HG		.500	.1875	.0313		★	★	●	●										
TNMM 433 EHG		TNMM 220412N-HG				.0469	.2031	★	★	●	●										
TNMM 434 EHG		TNMM 220416N-HG				.0625		★		●											



Negative
Inserts

C

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K

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S

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V

W

Swiss
Tooling

TN

Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNP_{R/L} FX		Rake Angle: 14°		Cutting Conditions:		Coated	Cermet			Uncoated		
				Continuous Cut		○	●	●				
				Medium Cut		○	●	●	●			
				Interrupted Cut			●	●				
						ACZ310						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1							
TNPR 330.5 FFX	TNGG 160402R-FX			.0078			●					
TNPL 330.5 FFX	TNGG 160402L-FX			.0078			●	●	●			
TNPR 331 FFX	TNGG 160404R-FX	.375	.1875	.0156	.150		★	★	★			
TNPL 331 FFX	TNGG 160404L-FX			.0156		★	★	★				

TNP_{R/L} FY		Rake Angle: 15°		Cutting Conditions:		Coated	Cermet			Uncoated		
				Continuous Cut		○	●	●				
				Medium Cut		○	●	●	●			
				Interrupted Cut			●	●				
						ACZ310						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1							
TNPR 330.5 FFY	TNGG 160402R-FY			.0078			●					
TNPL 330.5 FFY	TNGG 160402L-FY			.0078			●	●	●			
TNPR 331 FFY	TNGG 160404R-FY	.375	.1875	.0156	.150		★	★	★			
TNPL 331 FFY	TNGG 160404L-FY			.0156		★	★	★				



TRIANGULAR TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

TN

Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TNP _{R/L}		Rake Angle: 0°	Cutting Conditions:				Coated	Cermet			Uncoated		
Q			Continuous Cut										
			Medium Cut										
			Interrupted Cut										
Sumitomo Catalog #		ISO Catalog #	I.C.	T	r	ød ₁				T1200A			ST20E
TNPL 220.5 Q	TNGG 110302L-Q				.0078								
TNPR 221 Q	TNGG 110304R-Q		.325	.125	.0156	.089							
TNPL 221 Q	TNGG 110304L-Q				.0156								

TNP _{R/L}		Rake Angle: 0°		Cutting Conditions:		Coated		Cermet		Uncoated	
T				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
								T1200A		G10E	
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1				
TNPR 320.5 T	TNGG 160302R-ST	.325	.125	.0078	.150						
TNPL 320.5 T	TNGG 160302L-ST										
TNPR 321 T	TNGG 160304R-ST										
TNPL 321 T	TNGG 160304L-ST										
TNPR 322 T	TNGG 160308R-ST										
TNPL 322 T	TNGG 160308L-ST										



TN

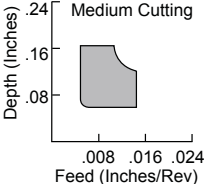
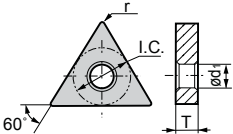
Triangular Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNP _{R/L}		Rake Angle: 14°		Cutting Conditions:		Coated			Cermet			Uncoated						
M				Continuous Cut														
				Medium Cut														
				Interrupted Cut														
									T2000Z	T3000Z	T1200A		ST20E	A30	G10E	H1		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1													
TNPR 330.5 M	TNGG 160402R-UM	.375	.1875	.0078	.150				●	●	●		▲		●			
TNPL 330.5 M	TNGG 160402L-UM			.0078			●	●	●		▲		●					
TNPR 331 M	TNGG 160404R-UM			.0156			●	★	●		★	★	★					
TNPL 331 M	TNGG 160404L-UM			.0156			★	★	●		★	★	★	★				
TNPR 332 M	TNGG 160408R-UM			.0313			●	★	●		★	★	★					
TNPL 332 M	TNGG 160408L-UM			.0313			★	★	●		★	★	★	★				
TNPR 333 M	TNGG 160412R-UM	.500	.2031	.0469									★					
TNPL 333 M	TNGG 160412L-UM			.0469					★									
TNPR 431 M	TNGG 220404R-UM			.0156				●			★							
TNPL 431 M	TNGG 220404L-UM			.0156				●		★	★							
TNPR 432 M	TNGG 220408R-UM			.0313				●		★	★							
TNPL 432 M	TNGG 220408L-UM			.0313				●		★	★							

TNGX		Rake Angle: 15°		Cutting Conditions:		Coated	Cermet		Uncoated	
GX				Continuous Cut						
				Medium Cut					●	
				Interrupted Cut						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1				G10E	
TNGX 331L	TNGG 160404L-GX	.500	.1875	.0469	.2031				▲	



Negative
Inserts

C

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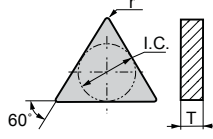
W

Swiss
Tooling



P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TNG		No Breaker	Cutting Conditions:						Coated	Cermet	Uncoated					
			Continuous Cut													
			Medium Cut													
			Interrupted Cut													
																
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1											
TNG 322	TNGN 160308		.125	.0313	-											
TNG 332	TNGN 160408	.375	.1875	.0313	-											

Negative Inserts

C

D

K

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S

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V

W

Swiss Tooling



VN

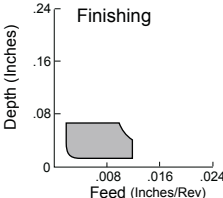
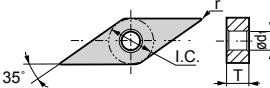
35° Diamond Type

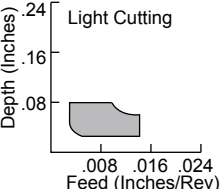
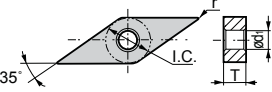
Negative

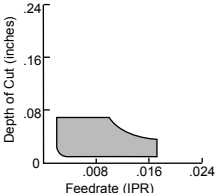
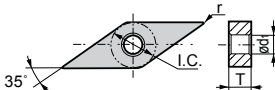
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VNMG ESP		Rake Angle: 13°	Cutting Conditions:						Coated			Cermet			Uncoated		
			Continuous Cut														
			Medium Cut														
			Interrupted Cut														
																	
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1										
VNMG 331 ESP		VNMG 160404N-SP		.375	.1875	.0156	.150										
VNMG 332 ESP		VNMG 160408N-SP		.375	.1875	.0313	.150										

VNMG ESU		Rake Angle: 13°		Cutting Conditions:						Coated								Cermet			Uncoated						
				Continuous Cut																							
				Medium Cut																							
				Interrupted Cut																							
												AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC630M	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z	T1200A	EH510	EH520
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1																				
VNMG 331 ESU		VNMG 160404N-SU		.375	.1875	.0156	.150																				
VNMG 332 ESU		VNMG 160408N-SU				.0313																					

VNMG ELU		Rake Angle: 10° 	Cutting Conditions:						Coated			Cermet			Uncoated					
			Continuous Cut																	
			Medium Cut																	
			Interrupted Cut																	
																				
Sumitomo Catalog #			ISO Catalog #		I.C.	T	r	ød1	AC2000	AC820P	AC700G		T2000Z	T3000Z						
VNMG 331 ELU			VNMG 160404N-LU		.375	.1875	.0156	.150												
VNMG 332 ELU			VNMG 160408N-LU				.0313	.150												



Negative Inserts

C

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Swiss Tooling

VN

35° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VNMG EUP		Rake Angle: 10°		Cutting Conditions:		Coated								Uncoated			
						Continuous Cut		●	●	●	●	●	●				
						Medium Cut		●	●	●	●	●	●			●	
						Interrupted Cut		●	●	●	●	●	●				
								AC2000	AC3000	AC820P	AC830P	AC510U	AC520U	EH10Z	EH20Z		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1												
VNMG 331 EUP	VNMG 160404N-UP	.375	.1875	.0156	.150											●	
VNMG 332 EUP	VNMG 160408N-UP			.0313												●	

VNMG EEX		Rake Angle: 16°		Cutting Conditions:		Coated								Uncoated			
						Continuous Cut		●	●								
						Medium Cut		●	●	●	●						
						Interrupted Cut		●	●	●							
								AC610M	AC630M	AC520U	EH520Z						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1												
VNMG 331 EEX	VNMG 160404N-EX	.375	.1875	.0156	.150												
VNMG 332 EEX	VNMG 160408N-EX			.0313													

VNMG EGU		Rake Angle: 7°		Cutting Conditions:		Coated								Cermet	Uncoated		
						Continuous Cut		●	●	●	●	●	●	●			
						Medium Cut		●	●	●	●	●	●	●			
						Interrupted Cut		●	●	●	●	●	●	●			
								AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC610M	AC630M	T1200A	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1												
VNMG 331 EGU	VNMG 160404N-GU			.0156												●	
VNMG 332 EGU	VNMG 160408N-GU	.375	.1875	.0313	.150												
VNMG 333 EGU	VNMG 160412N-GU			.0469													



Negative Inserts

C

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K

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W

Swiss Tooling

35° DIAMOND TYPE NEGATIVE INSERT

Indexable Inserts for Turning

VN

35° Diamond Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

VNMA

No Breaker



Cutting Conditions:

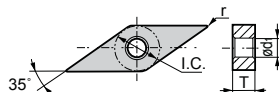
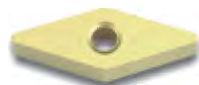
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC700G
 AC410K
 AC300G

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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VNMA 331

VNMA 160404

VNMA 332

VNMA 160408

VNMA 333

VNMA 160412

.375

.1875

.0313

.150

.0469

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★

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WN

Trigon Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WNMG EFA		Cutting Conditions:					Coated	Cermet		Uncoated			
Rake Angle: 20°		Continuous Cut											
		Medium Cut											
		Interrupted Cut											
Sumitomo Catalog #		ISO Catalog #					T2000Z		T3000Z		T1200A		
WNMG 430.5 EFA	WNMG 080402N-FA	.500	.1875	.0078	.2031								
WNMG 431 EFA	WNMG 080404N-FA			.0156									
WNMG 432 EFA	WNMG 080408N-FA			.0313									

WNMG EFL		Cutting Conditions:					Coated	Cermet		Uncoated			
Rake Angle: 10°		Continuous Cut											
		Medium Cut											
		Interrupted Cut											
Sumitomo Catalog #		ISO Catalog #					AC2000		T2000Z		T3000Z		
WNMG 431 EFL	WNMG 080404N-FL	.500	.1875	.0156	.2031								
WNMG 432 EFL	WNMG 080408N-FL			.0313									

WNMG ESP		Cutting Conditions:					Coated	Cermet		Uncoated			
Rake Angle: 13°		Continuous Cut											
		Medium Cut											
		Interrupted Cut											
Sumitomo Catalog #		ISO Catalog #					T1200A						
WNMG 431 ESP	WNMG 080404N-SP	.500	.1875	.0156	.2031								
WNMG 432 ESP	WNMG 080408N-SP			.0313									



Negative Inserts

C

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K

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V

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Swiss Tooling

WN

Trigon Type

Negative

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WNMG ELUW Wiper Insert		Rake Angle: 10°		Cutting Conditions:		Coated					Cermet					Uncoated				
						Continuous Cut														
						Medium Cut														
						Interrupted Cut														
Sumitomo Catalog #		ISO Catalog #		I.C.		T	r	ød1		AC2000	AC820P	AC700G	YB100	AC630M		T2000Z	T3000Z			
WNMG 331 ELUW		WNMG 060404N-LUW		.375			.0156	.150		●	●	●	●	●		●	●			
WNMG 332 ELUW		WNMG 060408N-LUW					.0313			●	●	●	●	●		●	●			
WNMG 431 ELUW		WNMG 080404N-LUW				.1875	.0156			●	●	●	●	●		●	●			
WNMG 432 ELUW		WNMG 080408N-LUW		.500			.0313	.2031		●	●	●	●	●		●	●			
WNMG 433 ELUW		WNMG 080412N-LUW					.0469			●	●	●	●	●		●	●			

WNMG ENK		Rake Angle: 10°		Cutting Conditions:		Coated					Cermet					Uncoated				
						Continuous Cut														
						Medium Cut														
						Interrupted Cut														
Sumitomo Catalog #		ISO Catalog #		I.C.		T	r	ød1		AC2000	AC820P									
WNMG 431 ENK		WNMG 080404N-SK		.500		.1875	.0156	.2031		●	●									
WNMG 432 ENK		WNMG 080408N-SK					.0313			●	●									

WNMG ESX		Rake Angle: 3°		Cutting Conditions:		Coated					Cermet					Uncoated				
						Continuous Cut														
						Medium Cut														
						Interrupted Cut														
Sumitomo Catalog #		ISO Catalog #		I.C.		T	r	ød1		AC2000	AC3000	AC820P	AC830P	AC700G		T2000Z	T3000Z	T1200A		
WNMG 431 ESX		WNMG 080404N-SX					.0156			●	●	●	●	●		●	●	●		
WNMG 432 ESX		WNMG 080408N-SX		.500		.1875	.0313	.2031		●	●	●	●	●		●	★	●		
WNMG 433 ESX		WNMG 080412N-SX					.0469			●	●	●	●	●		●	●	●		



WN

Trigon Type

Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WNMG EGU		Rake Angle: 7°		Cutting Conditions:		Coated						Cermet		Uncoated	
				Continuous Cut		●	●	●	●	●	●	●			
				Medium Cut		●	●	●	●	●	●	●			
				Interrupted Cut		●	●	●	●	●	●	●			
						AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC610M	AC630M	T1200A	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
WNMG 331 EGU	WNMG 060404N-GU	.375		.0156	.150			●							
WNMG 332 EGU	WNMG 060408N-GU			.0313				●							
WNMG 431 EGU	WNMG 080404N-GU		.1875	.0156		●	●	●	●	●	●	●	●	★	
WNMG 432 EGU	WNMG 080408N-GU	.500		.0313	.2031	●	●	●	●	●	●	●	●	★	
WNMG 433 EGU	WNMG 080412N-GU			.0469		●	●	●	●	●	●	●	●		

WNMG EGUW Wiper Insert		Rake Angle: 0°		Cutting Conditions:		Coated						Cermet		Uncoated	
				Continuous Cut		●	●	●	●	●	●				
				Medium Cut		●	●	●	●	●	●				
				Interrupted Cut		●	●	●	●	●	●				
						AC2000	AC820P	AC700G	YB100	AC630M	AC410K	AC300G			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
WNMG 432 EGUW	WNMG 080408N-GUW	.500	.1875	.0313	.2031	●	●	●	●	●	●	▲			
WNMG 433 EGUW	WNMG 080412N-GUW			.0469		●	●	●	●	●	●	▲			

WNMG EGE		Rake Angle: 3°		Cutting Conditions:		Coated						Uncoated			
				Continuous Cut		●	●	●							
				Medium Cut		●	●	●							
				Interrupted Cut		●	●	●							
						AC830P	AC820P	AC700G							
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
WNMG 333 EGE	WNMG 060412N-GE	.375		.0469	.150	●	●	●							
WNMG 432 EGE	WNMG 080408N-GE		.1875	.0313		●	●	●							
WNMG 433 EGE	WNMG 080412N-GE	.500		.0469	.2031	●	●	●							



Negative Inserts

C

D

K

R

S

T

V

W

Swiss Tooling

TRIGON TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

WN

Trigon Type

Negative

With Insert Hole

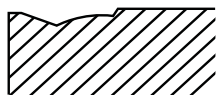
P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

WNMG

EUX

Rake Angle: 0°



Cutting Conditions:

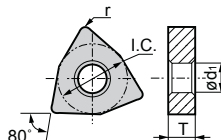
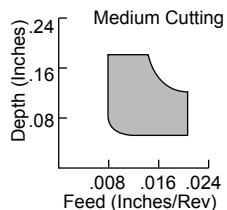
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Cermet



AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC410K
●	●	●	●	●	●	★
●	●	●	●	●	●	●
●	●	●	●	●	●	●

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

WNMG 431 EUX

WNMG 080404N-UX

.500

.1875

.0313

.2031

WNMG 432 EUX

WNMG 080408N-UX

.500

.1875

.0313

.2031

WNMG 433 EUX

WNMG 080412N-UX

.500

.1875

.0469

.2031

WNMG

ENG

Rake Angle: 4°



Cutting Conditions:

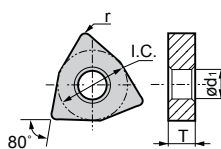
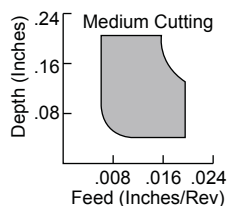
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Cermet



AC2000	AC3000	AC700G	EH10Z	EH20Z
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

WNMG 431 ENG

WNMG 080404N-UG

.500

.1875

.0313

.2031

WNMG 432 ENG

WNMG 080408N-UG

.500

.1875

.0313

.2031

WNMG 433 ENG

WNMG 080412N-UG

.500

.1875

.0469

.2031

WNMG 543 ENG

WNMG 160612N-UG

.625

.250

.0469

.250



WN

Trigon Type

Negative

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WNMG		Rake Angle: 4°		Cutting Conditions:		Coated										Uncoated	
ENZ																	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC410K	AC300G				G10E	
WNMG 431 ENZ	WNMG 080412N-UZ	.500	.1875	.0156	.2031	●	●	●	●	●	●	●					
WNMG 432 ENZ	WNMG 080408N-UZ			.0313		●	●	●	●	●	●	▲				▲	
WNMG 432 ENZ-S	WNMG 080408N-UZ-S			.0313		●	●	●	●	●	●	●					
WNMG 433 ENZ	WNMG 080412N-UZ			.0469		●	●	●	●	●	●	▲					
WNMG 433 ENZ-S	WNMG 080412N-UZ-S			.0469		●	●	●	●	●	●	●					

WNMG		Rake Angle: 4°		Cutting Conditions:						Coated											Uncoated		
EMU				Continuous Cut																			
				Medium Cut																			
				Interrupted Cut																			
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	YB100	AC610M	AC630M	AC300G	AC510U	AC520U	EH510Z	EH520Z	EH20Z		
WNMG 332 EMU	WNMG 060408N-MU			.375		.0313	.150	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
WNMG 333 EMU	WNMG 060412N-MU				.1875	.0469		●	●	●	●	●	●	●	●	●	●	●	●	●	●		
WNMG 432 EMU	WNMG 080408N-MU					.0313	.2031	●	●	●	●	●	●	●	●	▲	●	●	●	●	●		
WNMG 433 EMU	WNMG 080412N-MU			.500		.0469		●	●	●	●	●	●	●	●	▲	●	●	●	●	●		
WNMG 543 EMU	WNMG 160612N-MU			.625	.250	.0469	.250	●	●	●	●	●	●	●	●	●	●	●	●	●	●		



Negative
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

TRIGON TYPE

NEGATIVE INSERT

Indexable Inserts for Turning

WN

Trigon Type
Negative
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

WNMG

EMX

Rake Angle: -15°



Cutting Conditions:

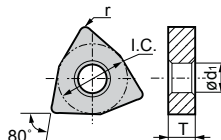
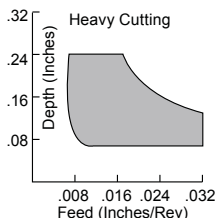
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC2000
AC3000
AC820P
AC830P

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

WNMG 432 EMX

WNMG 080408N-MX

.500

.1875

.0313

.2031

WNMG 433 EMX

WNMG 080412N-MX

.500

.1875

.0469

.2031

WNGG

ESU

Rake Angle: 13°



Cutting Conditions:

Continuous Cut

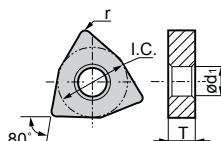
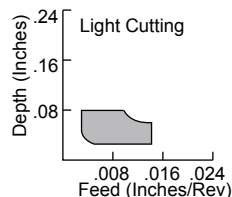
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC520U
EH520Z

T2000Z
T3000Z

Sumitomo Catalog #

ISO Catalog #

I.C.

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r

ød1

WNGG 431 ESU

WNGG 080404N-SU

.500

.1875

.0156

.2031

WNMA

No Breaker



Cutting Conditions:

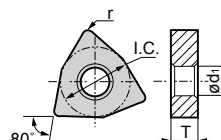
Continuous Cut

Medium Cut

Interrupted Cut

Coated

Uncoated



AC700G
YB100
AC410K
AC300G

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

WNMA 432

WNMA 080408

.500

.1875

.0313

.2031

WNMA 432-S

WNMA 080408-S

.500

.1875

.0313

.2031

WNMA 433

WNMA 080412

.500

.1875

.0469

.2031

WNMA 433-S

WNMA 080412-S

.500

.1875

.0469

.2031

WNMA 434

WNMA 080416

.500

.1875

.0625

.2031



CC

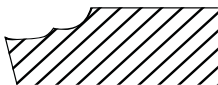
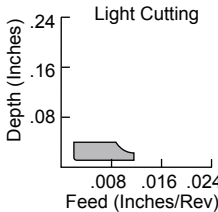
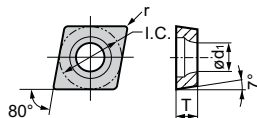
80° Diamond Type

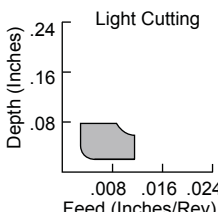
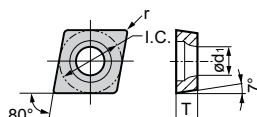
7° Relief

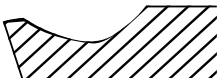
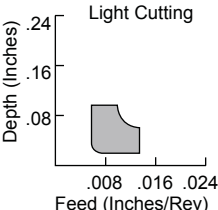
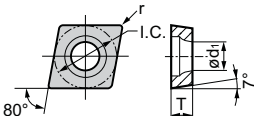
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CCMT EFP		Rake Angle: 10°	Cutting Conditions:				Coated		Cermet		Uncoated				
			Continuous Cut												
			Medium Cut												
			Interrupted Cut												
															
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1				T2000Z	T1200A					
CCMT 21.51 EFP	CCMT 060204N-FP	.250	.094	.0156	.110										
CCMT 32.51 EFP	CCMT 09T304N-FP			.0156											
CCMT 32.52 EFP	CCMT 09T308N-FP	.375	.156	.0313	.1732										

CCMT EFM		Rake Angle: 6°	Cutting Conditions:						Coated	Cermet		Uncoated													
			Continuous Cut																						
			Medium Cut																						
			Interrupted Cut																						
															AC2000										
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1																		
CCMT 21.51 EFM		CCMT 060204N-SC		.250	.094	.0156	.110																		
CCMT 32.52 EFM		CCMT 090308N-SC		.375	.125	.0313	.1732																		

CCMT ESJ			Cutting Conditions:				Coated			Cermet			Uncoated			
			Continuous Cut													
			Medium Cut													
			Interrupted Cut													
			Light Cutting  							T1200A						
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1									
CCMT 21.51 ESJ		CCMT 060204N-SJ		.250	.094	.0156	.110									
CCMT 32.51 ESJ		CCMT 09T304N-SJ				.0156										
CCMT 32.52 ESJ		CCMT 09T308N-SJ		.375	.156	.0313	.1732									



80° DIAMOND TYPE

POSITIVE INSERT

Indexable Inserts for Turning

CC

80° Diamond Type

7° Relief

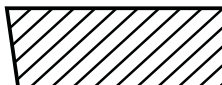
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

CCMA

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

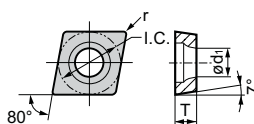
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC700G
AC410K

Sumitomo Catalog #

ISO Catalog #

I.C.

T

r

ød1

CCMA 21.51

CCMA 060204

.250

.094

.0156

.110

CCMA 32.51

CCMA 09T304

.375

.156

.0156

.1732

CCMA 32.52

CCMA 09T308

.375

.156

.0313

.1732

CCGT

FX

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

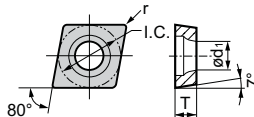
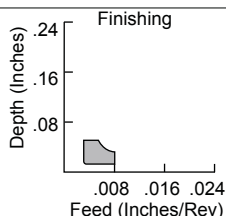
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



ACZ150
ACZ310
AC530U
EH10Z
T2000Z
T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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ød1

CCGT 21.5.001 RFX

CCGT 0602003R-FX

.250

.094

.0012

.110

CCGT 21.5.001 LFX

CCGT 0602003L-FX

.250

.094

.0012

.110

CCGT 21.50 RFX

CCGT 060201R-FX

.250

.094

.0039

.110

CCGT 21.50 LFX

CCGT 060201L-FX

.250

.094

.0039

.110

CCGT 21.50.5 RFX

CCGT 060202R-FX

.250

.094

.0078

.110

CCGT 21.50.5 LFX

CCGT 060202L-FX

.250

.094

.0078

.110

CCGT 21.51 RFX

CCGT 060204R-FX

.250

.094

.0156

.110

CCGT 21.51 LFX

CCGT 060204L-FX

.250

.094

.0156

.110

CCGT 32.5.001 RFX

CCGT 09T3003R-FX

.375

.156

.0012

.1732

CCGT 32.5.001 LFX

CCGT 09T3003L-FX

.375

.156

.0012

.1732

CCGT 32.50 RFX

CCGT 09T301R-FX

.375

.156

.0039

.1732

CCGT 32.50 LFX

CCGT 09T301L-FX

.375

.156

.0039

.1732

CCGT 32.50.5 RFX

CCGT 09T302R-FX

.375

.156

.0078

.1732

CCGT 32.50.5 LFX

CCGT 09T302L-FX

.375

.156

.0078

.1732

CCGT 32.51 RFX

CCGT 09T304R-FX

.375

.156

.0156

.1732

CCGT 32.51 LFX

CCGT 09T304L-FX

.375

.156

.0156

.1732

CCGT 32.52 LFX

CCGT 09T308L-FX

.375

.156

.0313

.1732



CC

80° Diamond Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CCGT FZ		Rake Angle: 27°		Cutting Conditions:		Coated	Cermet	Uncoated
				Continuous Cut		○		
				Medium Cut		◐		
				Interrupted Cut		◑		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	ACZ310		
CCGT 21.5.001 RFZ	CCGT 0602003R-FZ	.250	.094	.0012	.110	●		
CCGT 21.5.001 LFZ	CCGT 0602003L-FZ			.0012		●		
CCGT 21.50 RFZ	CCGT 060201R-FZ			.0039		●		
CCGT 21.50 LFZ	CCGT 060201L-FZ			.0039		●		
CCGT 21.50.5 RFZ	CCGT 060202R-FZ			.0078		●		
CCGT 21.50.5 LFZ	CCGT 060202L-FZ	.375	.156	.0078	.1732	●		
CCGT 32.5.001 RFZ	CCGT 09T3003R-FZ			.0012		●		
CCGT 32.5.001 LFZ	CCGT 09T3003L-FZ			.0012		●		
CCGT 32.50 RFZ	CCGT 09T301R-FZ			.0039		●		
CCGT 32.50 LFZ	CCGT 09T301L-FZ			.0039		●		
CCGT 32.50.5 RFZ	CCGT 09T302R-FZ			.0078		●		
CCGT 32.50.5 LFZ	CCGT 09T302L-FZ			.0078		●		
CCGT 32.51 RFZ	CCGT 09T304R-FZ			.0156		●		
CCGT 32.51 LFZ	CCGT 09T304L-FZ			.0313		●		

CCGT EFM		Rake Angle: 6°		Cutting Conditions:		Coated	Cermet	Uncoated
				Continuous Cut		○ ○	● ●	
				Medium Cut		◐ ◐	● ●	
				Interrupted Cut			●	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	ACZ150	ACZ310	T2000Z T1200A
CCGT 21.5.001 EFM	CCGT 0602003N-SC	.250	.094	.0012	.110	★ ●	●	●
CCGT 21.50 EFM	CCGT 060201N-SC			.0039		★ ●	●	●
CCGT 21.50.5 EFM	CCGT 060202N-SC			.0078		★ ●	●	●
CCGT 21.51 EFM	CCGT 060204N-SC			.0156		★		
CCGT 2.51.50 EFM	CCGT 080201N-SC	.3125		.0039	.134			●
CCGT 2.51.50.5 EFM	CCGT 080202N-SC			.0078				●
CCGT 32.5.001 EFM	CCGT 09T3003N-SC	.375	.156	.0012	.1732	★ ●	●	●
CCGT 32.50 EFM	CCGT 09T301N-SC			.0039		★ ●	●	●
CCGT 32.50.5 EFM	CCGT 09T302N-SC			.0078		●		
CCGT 32.51 EFM	CCGT 09T304N-SC			.0313		★ ●	●	●



CP

80° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CPMT ENS		Rake Angle: 10°	Cutting Conditions:						Coated	Cermet	Uncoated
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC720					
CPMT 21.51 ENS	CPMT 060204N-US	.250	.094	.0156	.110	●					
CPMT 322 ENS	CPMT 090308N-US	.375	.125	.0313	.1732	●					
CPMT 432 ENS	CPMT 09T308N-US	.500	.1875	.0313	.2165	●					

CPMT ELU		Rake Angle: 12°	Cutting Conditions:						Coated	Cermet	Uncoated
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC700G	AC630M		T2000Z	T3000Z
CPMT 2.51.51 ELU	CPMT 080204N-LU	.3125	.094	.0156	.1732	●	●	●		●	●
CPMT 321 ELU	CPMT 090304N-LU	.375	.125	.0156	.1732	●	●	●		●	●
CPMT 322 ELU	CPMT 090308N-LU	.375	.125	.0313	.1732	●	●	●		●	●

CPMT ELUW Wiper Insert		Rake Angle: 12°	Cutting Conditions:						Coated	Cermet	Uncoated
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC700G			T2000Z	T3000Z
CPMT 321 ELUW	CPMT 090304N-LUW	.375	.125	.0156	.1732	●	●			●	●
CPMT 322 ELUW	CPMT 090308N-LUW	.375	.125	.0313	.1732	●	●			●	●



80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CP

80° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

CPMT ESU

Rake Angle: 8°



Cutting Conditions:

Continuous Cut

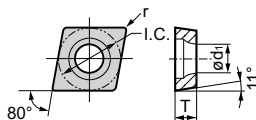
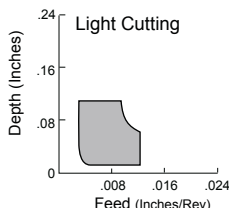
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated

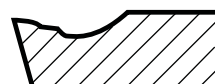


	AC2000	AC3000	AC820P	AC700G	AC610M	AC630M	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z	T1200A			
Continuous Cut	●	●	●	●	●	●	●	●	●	●	●	●	●			
Medium Cut	●	●	●	●	●	●	●	●	●	●	●	●	●			
Interrupted Cut	●	●	●	●	●	●	●	●	●	●	●	●	●			

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
CPMT 21.51 ESU	CPMT 060204N-SU	.250		.0156	.110
CPMT 21.52 ESU	CPMT 060208N-SU		.094	.0313	
CPMT 2.51.51 ESU	CPMT 080204N-SU	.3125		.0156	.134
CPMT 2.51.52 ESU	CPMT 080208N-SU			.0313	
CPMT 321 ESU	CPMT 090304N-SU		.125	.0156	
CPMT 322 ESU	CPMT 060308N-SU	.375		.0313	.1732
CPMT 32.51 ESU	CPMT 09T304N-SU		.156	.0156	
CPMT 32.52 ESU	CPMT 09T308N-SU			.0313	

CPMT EMU

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

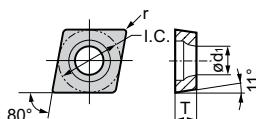
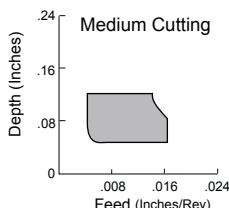
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



	AC2000	AC700G	AC410K													
Continuous Cut	●	●	●													
Medium Cut	●	●	●													
Interrupted Cut	●	●	●													

Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
CPMT 2.51.51 EMU	CPMT 080204N-MU	.3125	.094	.0156	.134
CPMT 2.51.52 EMU	CPMT 080208N-MU			.0313	
CPMT 321 EMU	CPMT 090304N-MU	.375	.125	.0156	.1732
CPMT 322 EMU	CPMT 090308N-MU			.0313	



CP

80° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CPMA		Cutting Conditions:						Coated				Cermet	Uncoated
Rake Angle: 0°													
		Continuous Cut						●	●				
		Medium Cut						●	●				
		Interrupted Cut						●					
								AC700G	AC410K				
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
CPMA 321	CPMA 090304			.0156		★	★						
CPMA 322	CPMA 090308	.375	.125	.0313	.1732	★	★						

CPGT		Cutting Conditions:						Coated				Cermet		Uncoated	
Rake Angle: 0°															
		Continuous Cut						●	●	●		●	●		
		Medium Cut						●	●	●	●	●	●	●	
		Interrupted Cut						●	●						
								AC510U	AC520U	EH510Z	EH520Z	EH10Z	T2000Z	T3000Z	T1200A
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1										
CPGT 2.51.50.5	CPGT 080202N-SD			.0078		●	●	●	●	●					
CPGT 2.51.51	CPGT 080204N-SD	.250	.094	.0156	.110	●	●	●	●	●				●	●
CPGT 2.51.52	CPGT 080208N-SD			.0313		●	●	●	●	●					
CPGT 320.5	CPGT 090302N-SD			.0078		●	●	●	●	●					
CPGT 321	CPGT 090304N-SD	.375	.156	.0156	.1732	●	●	●	●	●				●	●
CPGT 322	CPGT 090308N-SD			.0313		●	●	●	●	●					
CPGT 430.5	CPGT 120402N-SD			.0078		●	●	●	●	●					
CPGT 431	CPGT 120404N-SD	.500	.1875	.0156	.2165	●	●	●	●	●				●	●
CPGT 432	CPGT 120408N-SD			.0313		●	●	●	●	●					



80° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

CP

80° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

CPGM

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated

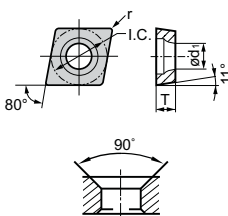
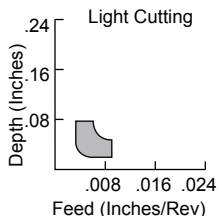
Cermet

Uncoated

EH10Z

T2000Z

T1200A



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	EH10Z	Coated	Cermet	Uncoated
CPGM 320.5	CPGH 090302N-SD			.0078		●			
CPGM 321	CPGH 090304N-SD	.375	.156	.0156	.1732	●			
CPGM 322	CPGH 090308N-SD			.0313		●			
CPGM 430.5	CPGH 120402N-SD			.0078		●			
CPGM 431	CPGH 120404N-SD	.500	.1875	.0156	.2165	●			
CPGM 432	CPGH 120408N-SD			.0313		●			



DC

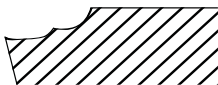
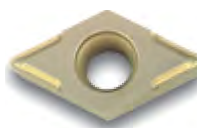
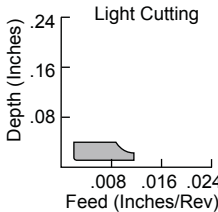
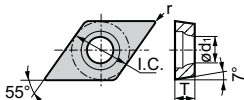
55° Diamond Type

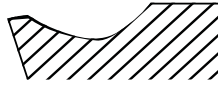
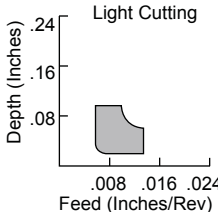
7° Relief

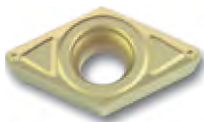
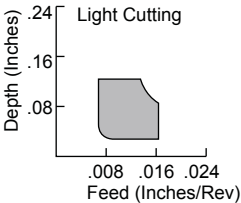
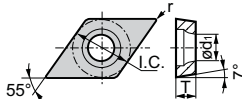
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DCMT EFP	Rake Angle: 10° 	Cutting Conditions:						Coated			Cermet			Uncoated					
		Continuous Cut																	
		Medium Cut																	
		Interrupted Cut																	
		Light Cutting 																	
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	T1200A											
DCMT 21.50.5 EFP		DCMT 070202N-FP		.250	.094	.0078	.110												
DCMT 21.51 EFP		DCMT 070204N-FP				.0156													
DCMT 32.51 EFP		DCMT 11T304N-FP				.0156	.1732												
DCMT 32.52 EFP		DCMT 11T308N-FP		.375	.156	.0313													

DCMT ESJ				Cutting Conditions:						Coated			Cermet			Uncoated		
				Continuous Cut														
				Medium Cut														
				Interrupted Cut														
																		
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1											
DCMT 21.51 ESJ		DCMT 070204N-SJ		.250	.094	.0156	.110											
DCMT 32.51 ESJ		DCMT 11T304N-SJ		.375	.156	.0156	.1732											
DCMT 32.52 ESJ		DCMT 11T308N-SJ		.375	.156	.0313	.1732											

DCMT ENK	Rake Angle: 8° 	Cutting Conditions:						Coated				Cermet				Uncoated			
		Continuous Cut																	
		Medium Cut																	
		Interrupted Cut																	
	Depth (Inches)  Light Cutting Feed (Inches/Rev)		AC2000																
			AC3000																
			AC820P																
			AC830P																
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1														
DCMT 21.51 ENK	DCMT 070204N-SK	.250	.094	.0156	.110														
DCMT 32.51 ENK	DCMT 11T304N-SK			.0156															
DCMT 32.52 ENK	DCMT 11T308N-SK	.375	.156	.0313	.1732														

Positive
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling

DC

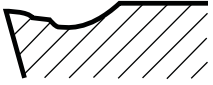
55° Diamond Type

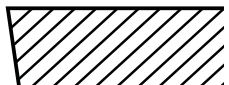
7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DCMT EMU		Cutting Conditions:						Coated				Cermet		Uncoated	
Rake Angle: 0°															
		Continuous Cut						●	●	●	●				
		Medium Cut						●	●	●	●				
		Interrupted Cut						●	●	●	●				
								AC2000	AC3000	AC820P	AC830P	AC700G	AC410K		
Sumitomo Catalog #		ISO Catalog #						I.C.	T	r	ød1				
DCMT 32.51 EMU		DCMT 11T304N-MU						.375	.156	.0156	.1732	●	●		
DCMT 32.52 EMU		DCMT 11T308N-MU								.0313		●	●		

DCMA		Cutting Conditions:						Coated				Cermet		Uncoated	
No Breaker															
		Continuous Cut						●	●						
		Medium Cut						●	●						
		Interrupted Cut						●							
								AC700G	AC410K						
Sumitomo Catalog #		ISO Catalog #						I.C.	T	r	ød1				
DCMA 21.51		DCMA 070204						.250	.094	.0156	.110	●	●		
DCMA 21.52		DCMA 070208								.0313		●	●		
DCMA 32.51		DCMA 11T304						.375	.156	.0156	.1732	●	●		
DCMA 32.52		DCMA 11T308								.0313		●	●		



55° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

DC

55° Diamond Type

7° Relief

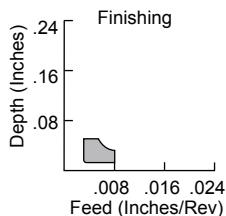
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

DCGT FX

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

	Coated			Cermet			Uncoated					
	○	○	○	○	○	○	○	○	○	○	○	○
Continuous Cut	○	○	○	○								
Medium Cut	○	○	○	○								
Interrupted Cut			○	○								
Sumitomo Catalog #	ACZ150	ACZ310	AC530U	T1200A								
ISO Catalog #												
I.C.												
T												
r												
ød1												
DCGT 21.5.001 RFX	★	●	●	●								
DCGT 21.5.001 LFX	★	●	●	●								
DCGT 21.50 RFX	★	●	●	●								
DCGT 21.50 LFX	★	●	●	●								
DCGT 21.50.5 RFX	★	●	●	●								
DCGT 21.50.5 LFX	★	●	●	●								
DCGT 21.51 RFX	★	●	●	●								
DCGT 21.51 LFX	★	●	●	●								
DCGT 32.5.001 RFX	★	●	●	●								
DCGT 32.5.001 LFX	★	●	●	●								
DCGT 32.50 RFX	★	●	●	●								
DCGT 32.50 LFX	★	●	●	●								
DCGT 32.50.5 RFX	★	●	●	●								
DCGT 32.50.5 LFX	★	●	●	●								
DCGT 32.51 RFX	★	●	●	●								
DCGT 32.51 LFX	★	●	●	●								



DC

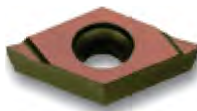
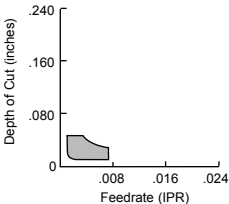
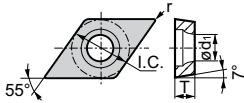
55° Diamond Type

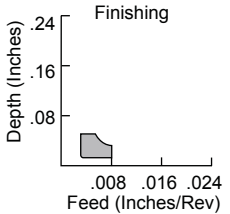
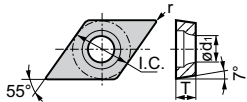
7° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DCGT FY		Rake Angle: 15°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
						ACZ310					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
DCGT 21.5.001 RFY	DCGT 0702003R-FY	.250	.094	.0012	.110						
DCGT 21.5.001 LFY	DCGT 0702003L-FY										
DCGT 21.50 RFY	DCGT 070201R-FY										
DCGT 21.50.5 LFY	DCGT 070202L-FY										
DCGT 21.51 RFY	DCGT 070204L-FY										
DCGT 21.51 LFY	DCGT 070204L-FY										
DCGT 32.5.001 RFY	DCGT 11T3003R-FY	.375	.156	.0012	.1732						
DCGT 32.5.001 LFY	DCGT 11T3003L-FY										
DCGT 32.50 LFY	DCGT 11T301L-FY										
DCGT 32.50.5 RFY	DCGT 11T302R-FY										
DCGT 32.51 LFY	DCGT 11T304L-FY										

DCGT		Rake Angle: 10°		Cutting Conditions:		Coated			Cermet			Uncoated				
W				Continuous Cut												
				Medium Cut												
				Interrupted Cut												
						T1200A										
Sumitomo Catalog #		ISO Catalog #		I.C.	T										r	ød1
DCGT 21.50.5 R	DCGT 070202R-W	.250	.094	.0078	.110											
DCGT 21.50.5 L	DCGT 070202L-W			.0078												
DCGT 21.51 R	DCGT 070204R-W			.0012												
DCGT 21.51 L	DCGT 070204L-W			.0012												
DCGT 32.51 R	DCGT 11T304R-W	.375	.156	.0039	.1732											
DCGT 32.51 L	DCGT 11T304L-W			.0039												
DCGT 32.52 R	DCGT 11T308R-W			.0078												
DCGT 32.52 L	DCGT 11T308L-W			.0078												



55° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

DC

55° Diamond Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

DCGT EFM

Rake Angle: 6°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated			Cermet			Uncoated					
○	○		●	●							
○	○		●	●	●						
			●	●							
ACZ150			T2000Z								
ACZ310			T3000Z								
			T1200A								
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
DCGT 21.5.001 EFM	DCGT 0702003N-SC	.250	.094	.0012	.110	★	●				
DCGT 21.50 EFM	DCGT 070201N-SC			.0039		★	●				
DCGT 21.50.5 EFM	DCGT 070202N-SC			.0078		★	●				
DCGT 21.51 EFM	DCGT 070204N-SC			.0156		★	●				
DCGT 21.52 EFM	DCGT 070208N-SC			.0313							
DCGT 2.51.50 EFM	DCGT 090201N-SC	.3125		.0039	.134						
DCGT 2.51.50.5 EFM	DCGT 090202N-SC			.0078							
DCGT 32.5.001 EFM	DCGT 11T3003N-SC	.375	.156	.0012	.1732	★	●				
DCGT 32.50 EFM	DCGT 11T301N-SC			.0039		★	●				
DCGT 32.50.5 EFM	DCGT 11T302N-SC			.0078		★	●				
DCGT 32.51 EFM	DCGT 11T304N-SC			.0156		★	●				
DCGT 32.52 EFM	DCGT 11T308N-SC			.0313							

DCGT NAG

Rake Angle: 20°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated			Cermet			Uncoated					
											
											



DP

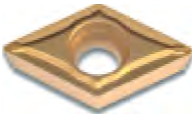
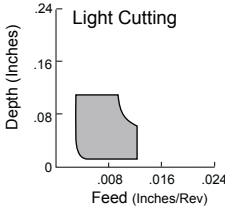
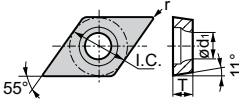
55° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DPMT ESU		Rake Angle: 8° 		Cutting Conditions:					Coated							Cermet		Uncoated						
				Continuous Cut																				
				Medium Cut																				
				Interrupted Cut																				
												AC2000									T1200A			
								AC820P																
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1																	
DPMT 21.51 ESU		DPMT 070204N-SU		.250	.094	.0156	.110																	
DPMT 32.51 ESU		DPMT 11T304N-SU				.0156																		
DPMT 32.52 ESU		DPMT 11T308N-SU		.375	.156	.0313	.1732																	

DPGT FX		Rake Angle: 15°		Cutting Conditions:						Coated			Cermet			Uncoated						
				Continuous Cut																		
				Medium Cut																		
				Interrupted Cut																		
														ACZ310								
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1															
DPGT 21.50 RFX	DPGT 070201R-FX					.0039																
DPGT 21.50 LFX	DPGT 070201L-FX					.0039																
DPGT 21.50.5 RFX	DPGT 070202R-FX	.250	.094			.0078	.110															
DPGT 21.50.5 LFX	DPGT 070202L-FX					.0078																
DPGT 32.50 RFX	DPGT 11T301R-FX					.0039																
DPGT 32.50 LFX	DPGT 11T301L-FX					.0039																
DPGT 32.50.5 RFX	DPGT 11T302R-FX	.375	.156			.0078	.1732															
DPGT 32.50.5 LFX	DPGT 11T302L-FX					.0078																



55° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

DP

55° Diamond Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

DPGT FY

Rake Angle: 15°



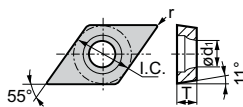
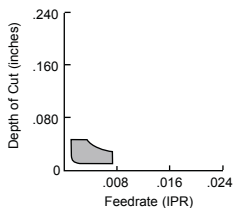
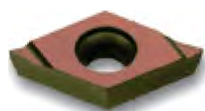
Cutting Conditions:

Continuous Cut ○

Medium Cut ⊕

Interrupted Cut ⊙

Coated	Cermet	Uncoated
○		
⊕		
⊙		
ACZ310		
●		
●		
●		
●		
●		
●		



ACZ310

Sumitomo Catalog #

ISO Catalog #

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DPGT 21.50 RFY	DPGT 070201R-FY			.0039	.110
DPGT 21.50 LFY	DPGT 070201L-FY	.250	.094	.0039	.110
DPGT 21.50.5 RFY	DPGT 070202R-FY			.0078	
DPGT 32.50 RFY	DPGT 11T301R-FY	.375	.156	.0039	.1732
DPGT 32.50.5 RFY	DPGT 11T302R-FY			.0078	

DCGT EFC

Rake Angle: 15°



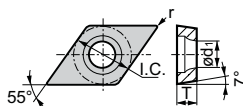
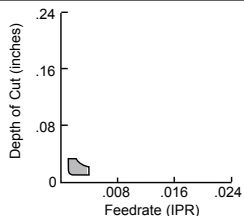
Cutting Conditions:

Continuous Cut ●

Medium Cut ⊕

Interrupted Cut ⊙

Coated	Cermet	Uncoated
●		
⊕		
⊙		
AC530U		
●		
●		
●		
●		
●		
●		
●		
●		
●		
●		



AC530U

Sumitomo Catalog #

ISO Catalog #

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DCGT 21.5.001 EFC	DCGT 0702003N-FC			.0012	.110
DCGT 21.50 EFC	DCGT 070201N-FC	.250	.094	.0039	.110
DCGT 21.50.5 EFC	DCGT 070202N-FC			.0078	
DCGT 21.51 EFC	DCGT 070204N-FC			.0156	
DCGT 32.5.001 EFC	DCGT 11T3003N-FC			.0012	
DCGT 32.50 EFC	DCGT 11T301N-FC	.375	.156	.0039	.1732
DCGT 32.50.5 EFC	DCGT 11T302N-FC			.0078	
DCGT 32.51 EFC	DCGT 11T304N-FC			.0156	



RC

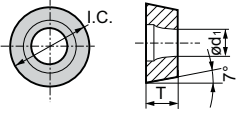
Round Type

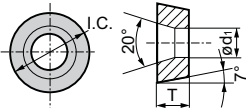
7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

RCMT RX		Rake Angle: -5°		Cutting Conditions:		Coated		Cermet		Uncoated	
											
				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
											
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC820P	AC830P				
RCMT 100300	RCMT 1003MON-RX	.394	.125		.1417	●	●				
RCMT 120400	RCMT 1204MON-RX	.472	.1875		.1654	●	●				
RCMT 160600	RCMT 1606MON-RX	.630	.250	-	.2047	●	●				
RCMT 200600	RCMT 2006MON-RX	.787			.2559	●	●				
RCMT 250700	RCMT 2507MON-RX	.984	.313		.2835	●	●				

RCMX RP		Rake Angle: -15°		Cutting Conditions:		Coated		Cermet		Uncoated	
											
				Continuous Cut							
				Medium Cut							
				Interrupted Cut							
											
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC700G	AC410K	A30	
RCMX 100300	RCMX 1003MON-RP	.394	.125		.1417	★	●	●	★	★	
RCMX 120400	RCMX 1204MON-RP	.472	.1875		.1654	●	●	●	★		
RCMX 160600	RCMX 1606MON-RP	.630	.250		.2047	●	●	●	★		
RCMX 200600	RCMX 2006MON-RP	.787			.2559	●	●	●	★		



SC

Square Type

7° Relief

With Insert Hole

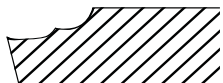
P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

SCMT

EFP

Rake Angle: 10°



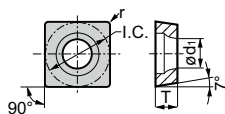
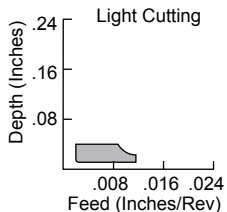
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

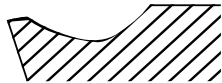
Coated			Cermet			Uncoated		
			●					
			●					
			●					



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
SCMT 32.51 EFP	SCMT 09T304N-FP	.375	.156	.0156	.1732
SCMT 32.52 EFP	SCMT 09T308N-FP			.0313	

SCMT

ESJ



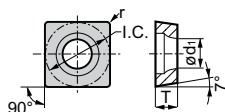
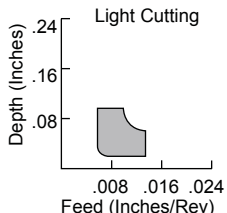
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated			Cermet			Uncoated		
			●	●				
			●	●				
			●	●				



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
SCMT 32.51 ESJ	SCMT 09T304N-SJ	.375	.156	.0156	.1732
SCMT 32.52 ESJ	SCMT 09T308N-SJ			.0313	

SCMT

ENK

Rake Angle: 8°



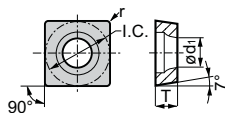
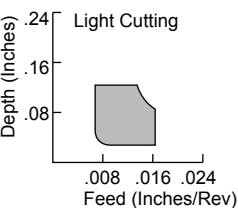
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated			Cermet			Uncoated		
●	●	●	●	●				
●	●	●	●	●				
●	●	●	●	●				



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1
SCMT 32.51 ENK	SCMT 09T304N-SK			.0156	
SCMT 32.52 ENK	SCMT 09T308N-SK	.375	.156	.0313	.1732
SCMT 431 ENK	SCMT 120404N-SK			.0156	
SCMT 432 ENK	SCMT 120408N-SK	.500	.1875	.0313	.2165
SCMT 433 ENK	SCMT 120412N-SK			.0469	



SC

Square Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SCMT ESU		Rake Angle: 8°		Cutting Conditions:		Coated						Cermets		Uncoated	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC610M	AC630M	T2000Z		
SCMT 32.51 ESU	SCMT 09T304N-SU	.375	.156	.0156	.1732	●	●	●	●	●	●	●	●		
SCMT 32.52 ESU	SCMT 09T308N-SU			.0313		●	●	●	●	●	●	●			
SCMT 431 ESU	SCMT 120404N-SU	.500	.1875	.0156	.2165	●	●	●	●	●	●	●			
SCMT 432 ESU	SCMT 120408N-SU			.0313		●	★	●	●	●	●	●			

SCMT ELU		Rake Angle: 12°		Cutting Conditions:		Coated						Cermets		Uncoated	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC820P	AC700G	AC630M				T2000Z	T3000Z	
SCMT 32.51 ELU	SCMT 09T304N-LU	.375	.156	.0156	.1732	●	●	●	●				●	●	
SCMT 32.52 ELU	SCMT 09T308N-LU			.0313		●	●	●	●						

SCMT EMU		Rake Angle: 0°		Cutting Conditions:		Coated						Cermets		Uncoated	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC700G								
SCMT 32.52 EMU	SCMT 09T308N-MU	.375	.156	.0313	.1732	●	●								
SCMT 432 EMU	SCMT 120408N-MU	.500	.1875	.0313	.2165	★	★								



SC

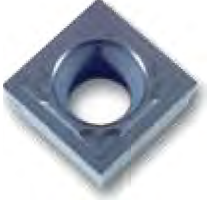
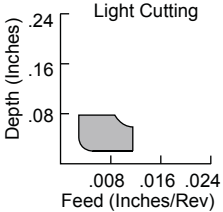
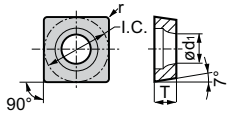
Square Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SCGT EFM		Rake Angle: 6°		Cutting Conditions:		Coated		Cermet		Uncoated	
				Continuous Cut		○		●			
				Medium Cut		◌		●			
				Interrupted Cut				●			
		 Light Cutting				ACZ310		T1200A			
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1						
SCGT 2.51.50 EFM	SCGT 070201N-SC	.3125	.094	.0039	.134						
SCGT 2.51.50.5 EFM	SCGT 070202N-SC			.0078							
SCGT 32.50 EFM	SCGT 09T301N-SC	.375	.156	.0039	.1732						
SCGT 32.50.5 EFM	SCGT 09T302N-SC			.0078							

Positive
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling



SP

Square Type

11° Relief

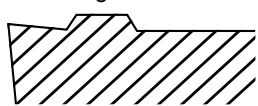
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

SPMT ENS

Rake Angle: 10°



Cutting Conditions:

Continuous Cut

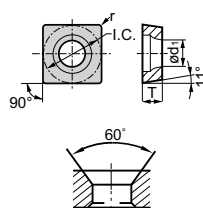
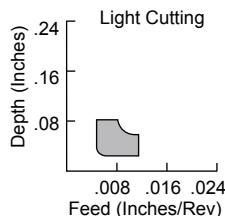
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000

AC720

AC630M

A30

Sumitomo Catalog #

ISO Catalog #

I.C.

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SPMT 21.51 ENS

SPMT 060204N-US

.250

.094

.0156

.1102

SPMT 2.522 ENS

SPMT 070308N-US

.3125

.125

.0313

.134

SPMT 432 ENS

SPMT 120408N-US

.500

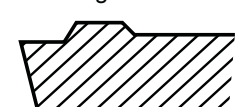
.1875

.0313

.2165

SPMT EFK

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

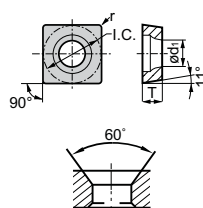
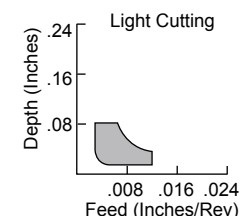
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



T2000Z

T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

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SPMT 321 EFK

SPMT 090304N-FK

.375

.125

.0156

.130

SPMT 322 EFK

SPMT 090308N-FK

.375

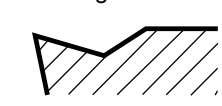
.125

.0313

.130

SPMT ELU

Rake Angle: 12°



Cutting Conditions:

Continuous Cut

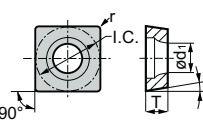
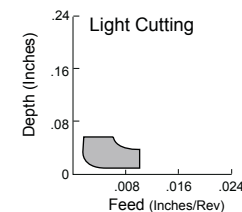
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000

AC700G

AC630M

T3000Z

Sumitomo Catalog #

ISO Catalog #

I.C.

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SPMT 321 ELU

SPMT 090304N-LU

.375

.125

.0156

.130

SPMT 322 ELU

SPMT 090308N-LU

.375

.125

.0313

.130



SP

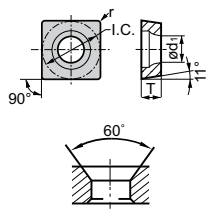
Square Type

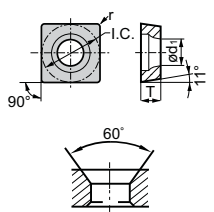
11° Relief

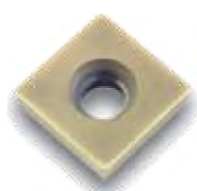
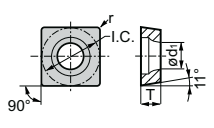
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SPMT ENF	Rake Angle: 0° 	Cutting Conditions:						Coated				Cermet	Uncoated
		Continuous Cut						●	●				
		Medium Cut						●	●	●	●		
		Interrupted Cut						●	●	●	●		
		Light Cutting Depth (Inches) .24 .16 .08 Feed (Inches/Rev) .008 .016 .024						AC2000	AC3000	AC820P	AC830P		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
SPMT 321 ENF	SPMT 090304N-SF			.0156		●	●	●	●				
SPMT 322 ENF	SPMT 090308N-SF	.375	.125	.0313	.130	●	●	●	●				

SPGG SD	Rake Angle: 0° 	Cutting Conditions:						Coated				Cermet	Uncoated
		Continuous Cut										●	●
		Medium Cut										●	●
		Interrupted Cut										●	●
		Light Cutting Depth (Inches) .24 .16 .08 Feed (Inches/Rev) .008 .016 .024										T2000Z	T3000Z
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
SPGG 320.5 L	SPGT 090302L-SD			.0078								●	●
SPGG 321 R	SPGT 090304R-SD			.0156								●	●
SPGG 321 L	SPGT 090304L-SD	.375	.125	.0156	.130							●	●
SPGG 322 R	SPGT 090308R-SD			.0313								●	●
SPGG 322 L	SPGT 090308L-SD			.0313								●	●

SPGA	No Breaker 	Cutting Conditions:						Coated				Cermet	Uncoated
		Continuous Cut										●	●
		Medium Cut										●	●
		Interrupted Cut										●	●
												T1200A	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
SPGA 321	SPGW 090304	.375	.125	.0156	.130							●	●



SP

Square Type

11° Relief

Without Insert Hole

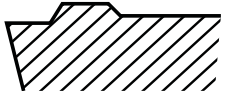
P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

SPMR

EFK

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

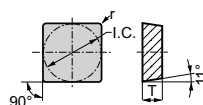
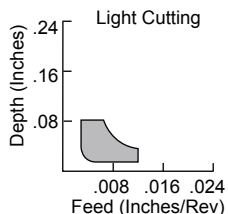
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	Coated	Cermet	Uncoated
SPMR 321 EFK	SPMR 090304N-FK	.375		.0156			T2000Z	
SPMR 322 EFK	SPMR 090308N-FK			.0313			T1200A	
SPMR 421 EFK	SPMR 120304N-FK		.125	.0156	-			
SPMR 422 EFK	SPMR 120308N-FK	.500		.0313				
SPMR 423 EFK	SPMR 120312N-FK			.0469				

SPMR

ENF

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

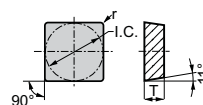
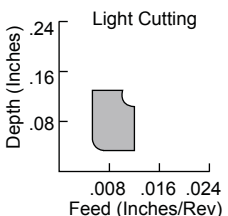
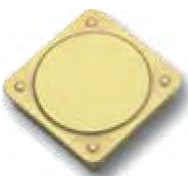
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	Coated	Cermet	Uncoated
SPMR 321 ENF	SPMR 090304N-SF	.375		.0156		AC2000		
SPMR 322 ENF	SPMR 090308N-SF			.0313		AC3000		
SPMR 421 ENF	SPMR 120304N-SF		.125	.0156	-	AC820P		
SPMR 422 ENF	SPMR 120308N-SF	.500		.0313		AC830P		
SPMR 423 ENF	SPMR 120312N-SF			.0469				



SP

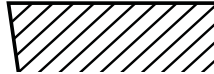
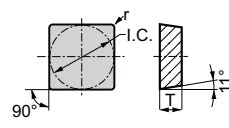
Square Type

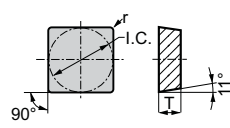
11° Relief

Without Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SPMN		No Breaker	Cutting Conditions:						Coated				Cermet			Uncoated						
																						
																						
																						
Sumitomo Catalog #		ISO Catalog #	I.C.	T	r	ød1	AC2000	AC700G	AC410K	AC300G			T1200A			ST20E	A30	G10E				
SPMN 321	SPMN 090304		.375		.0156		●	●	●	▲			★			★	★					
SPMN 322	SPMN 090308			.125	.0313		●	●	●	▲			★			★	★					
SPMN 421	SPMN 120304		.500		.0156		●	★	●				★			★	▲					
SPMN 422	SPMN 120308				.0313		●		★				★			★						
SPMN 423	SPMN 120312				.0469								★				▲		★			
SPMN 532	SPMN 150408		.625		.0313												★	★				
SPMN 533	SPMN 150412				.0469												★	★				
SPMN 631	SPMN 190404		.750	.1875	.0156												★	★				
SPMN 632	SPMN 190408				.0313												★	★				
SPMN 633	SPMN 190412				.0469		▲										★					
SPMN 634	SPMN 190416				.0625		●															

SPG		No Breaker	Cutting Conditions:						Coated	Cermet	Uncoated
											
											
											
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	EH10Z	EH20Z	T2000Z	T1200A	G10E
SPG 321	SPGN 090304	.375	.125	.0156					●	●	●
SPG 322	SPGN 090308			.0313					●	●	
SPG 323	SPGN 090312			.0469					●	●	
SPG 421	SPGN 120304	.500		.0156					●	★	▲
SPG 422	SPGN 120308			.0313		●	●	●	●	●	▲
SPG 423	SPGN 120312			.0469		●		▲	●		▲
SPG 424	SPGN 120316			.0625					●		
SPG 432	SPGN 120408			.0313		●		▲	●		
SPG 433	SPGN 120412			.0469		●		▲	●		
SPG 632	SPGN 190408	.750	.1875	.0313		●					
SPG 633	SPGN 190412			.0469		●			●		
SPG 634	SPGN 190416			.0625		●	▲				



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TB

Triangular Type

5° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TBGT

FW

Rake Angle: 20°



Cutting Conditions:

Continuous Cut

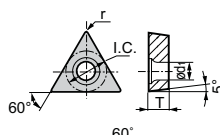
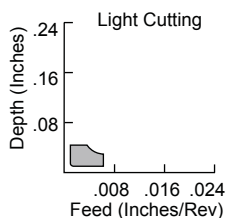
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TBGT 520.5 RFW

TBGT 060102R-FW

TBGT 520.5 LFW

TBGT 060102L-FW

TBGT 521 RFW

TBGT 060104R-FW

TBGT 521 LFW

TBGT 060104L-FW

.156

.0625

.0156

.090

.0156

T2000Z

T1200A

TBGT

FX

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

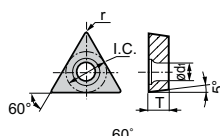
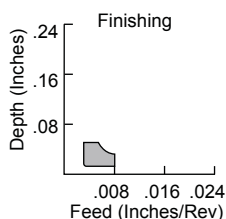
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TBGT 520.5 RFX

TBGT 060102R-FX

TBGT 520.5 LFX

TBGT 060102L-FX

TBGT 521 RFX

TBGT 060104R-FX

TBGT 521 LFX

TBGT 060104L-FX

.156

.0625

.0156

.090

.0156

AC2000

AC820P

AC510U

EH10Z

ACZ310



TB

Triangular Type

5° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TBGT FY		Rake Angle: 15°		Cutting Conditions:		Coated	Cermet			Uncoated		
				Continuous Cut		○	●					
				Medium Cut		◐	●					
				Interrupted Cut		◑	●					
						ACZ310	T1200A					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1							
TBGT 520 RFY	TBGT 060101R-FY	.156	.0625	.0039	.090	●						
TBGT 520 LFY	TBGT 060101L-FY			.0039		●						
TBGT 520.5 RFY	TBGT 060102R-FY			.0078		●	●					
TBGT 520.5 LFY	TBGT 060102L-FY			.0078		●						
TBGT 521 RFY	TBGT 060104R-FY			.0156		●	●					
TBGT 521 LFY	TBGT 060104L-FY			.0156		●	●					

TBGT W		Rake Angle: 10°		Cutting Conditions:		Coated	Cermet			Uncoated		
				Continuous Cut		● ○	●	●				
				Medium Cut		● ◐	●	●	●	●		
				Interrupted Cut		● ◑	●	●				
						AC2000	T2000Z	T3000Z	T1200A	G10E		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	ACZ310						
TBGT 520.5 R	TBGT 060102R-W	.156	.0625	.0078	.090	●	●	●	●	●		
TBGT 520.5 L	TBGT 060102L-W			.0078		●	●	●	●	●		
TBGT 521 R	TBGT 060104R-W			.0156		★	●	●	●	●		
TBGT 521 L	TBGT 060104L-W			.0156		●	●	●	●	●		



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TC

Triangular Type

7° Relief

With Insert Hole

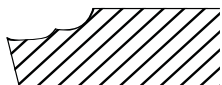
P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TCMT

EFP

Rake Angle: 10°



Cutting Conditions:

Continuous Cut

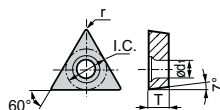
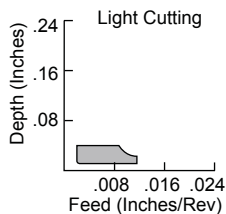
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TCMT 21.51 EFP

TCMT 110204N-FP

.250

.094

.0156

.110

TCMT 21.52 EFP

TCMT 110208N-FP

.250

.094

.0313

.110

TCMT 32.51 EFP

TCMT 16T304N-FP

.375

.156

.0156

.1693

TCMT 32.52 EFP

TCMT 16T308N-FP

.375

.156

.0313

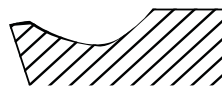
.1693

T2000Z

T1200A

TCMT

ESJ



Cutting Conditions:

Continuous Cut

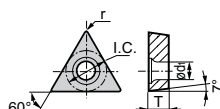
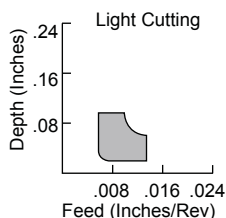
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TCMT 21.51 ESJ

TCMT 110204N-SJ

.250

.094

.0156

.110

TCMT 21.52 ESJ

TCMT 110208N-SJ

.250

.094

.0313

.110

TCMT 32.51 ESJ

TCMT 16T304N-SJ

.375

.156

.0156

.1693

TCMT 32.52 ESJ

TCMT 16T308N-SJ

.375

.156

.0313

.1693

T2000Z

T1200A



TC

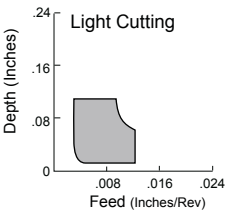
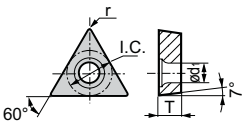
Triangular Type

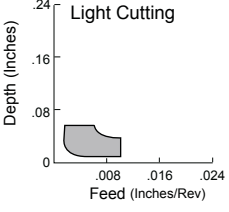
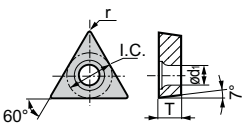
7° Relief

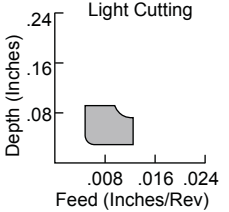
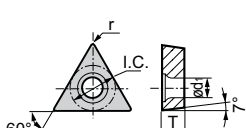
With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TCMT ESU		Rake Angle: 8°	Cutting Conditions:		Coated										Cermets		Uncoated	
					Continuous Cut													
					Medium Cut													
					Interrupted Cut													
																		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC700G	AC610M	AC630M	AC410K	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z
TCMT 21.51 ESU	TCMT 110204N-SU	.250	.094	.0156	.110	●	●	●	●	●	●	●	●	●	●	●	●	●
TCMT 21.52 ESU	TCMT 110208N-SU			.0313		●	●	●	●	●	●	●	●	●	●	●	●	●
TCMT 32.51 ESU	TCMT 16T304N-SU	.375	.156	.0156	.1693	●	●	●	●	●	●	●	●	●	●	●	●	●
TCMT 32.52 ESU	TCMT 16T308N-SU			.0313		●	●	●	●	●	●	●	●	●	●	●	●	●

TCMT ELU		Rake Angle: 12°	Cutting Conditions:		Coated										Cermets		Uncoated	
					Continuous Cut													
					Medium Cut													
					Interrupted Cut													
																		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC820P	AC700G	AC630M								T2000Z	T3000Z
TCMT 21.51 ELU	TCMT 070202N-LU	.250	.094	.0078	.110	●	●	●	●								●	●
TCMT 21.52 ELU	TCMT 070204N-LU			.0156		●	●	●	●								●	●

TCMT ENK		Rake Angle: 8°	Cutting Conditions:		Coated										Cermets		Uncoated	
					Continuous Cut													
					Medium Cut													
					Interrupted Cut													
																		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC300G							
TCMT 21.51 ENK	TCMT 110204-SK	.250	.094	.0156	.110	●	●	●	●	●	▲							
TCMT 21.52 ENK	TCMT 110208-SK			.0313		●	●	●	●	●	▲							
TCMT 32.51 ENK	TCMT 16T304-SK			.0156		●	●	●	●	●	▲							
TCMT 32.52 ENK	TCMT 16T308-SK	.375	.156	.0313	.1693	●	●	●	●	●	▲							
TCMT 32.53 ENK	TCMT 16T312-SK			.0469		●	●	●	●	●	▲							



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TC

Triangular Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TCMA

No Breaker



Cutting Conditions:

Continuous Cut

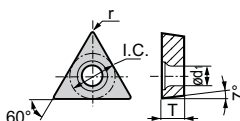
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC700G
AC410K

Sumitomo Catalog #

ISO Catalog #

I.C.

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TCMA 21.51

TCMW 110204

.250

.094

.0156

.110

TCMA 21.52

TCMW 110208

.250

.094

.0313

.110

TCMA 32.51

TCMW 16T304

.375

.156

.0156

.1693

TCMA 32.52

TCMW 16T308

.375

.156

.0313

.1693

TCMA 32.53

TCMW 16T312

.375

.156

.0469

.1693

TCGT

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

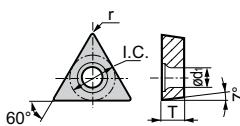
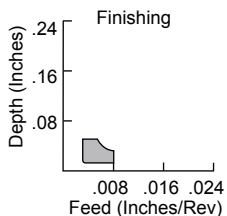
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



ACZ310

Sumitomo Catalog #

ISO Catalog #

I.C.

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TCGT 1.81.50 RFX

TCGT 090201R-FX

.219

.094

.0039

.098

TCGT 1.81.50 LFX

TCGT 090201L-FX

.219

.094

.0039

.098

TCGT 1.81.50.5 RFX

TCGT 090202R-FX

.219

.094

.0078

.098

TCGT 1.81.50.5 LFX

TCGT 090202L-FX

.219

.094

.0078

.098

TCGT 21.50 RFX

TCGT 110201R-FX

.250

.094

.0039

.110

TCGT 21.50 LFX

TCGT 110201L-FX

.250

.094

.0039

.110

TCGT 21.50.5 RFX

TCGT 110202R-FX

.250

.094

.0078

.110



TC

Triangular Type

7° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TCGT FY		Rake Angle: 15°		Cutting Conditions:		Coated		Cermet		Uncoated		
				Continuous Cut		○						
				Medium Cut		◐						
				Interrupted Cut								
						ACZ310						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1							
TCGT 1.81.50 RFY	TCGT 090201R-FY	.219	.094	.0039	.098							●
TCGT 1.81.50 LFY	TCGT 090201L-FY			.0039								●
TCGT 1.81.50.5 RFY	TCGT 090202R-FY			.0078								●
TCGT 1.81.50.5 LFY	TCGT 090202L-FY			.0078								●
TCGT 21.50 RFY	TCGT 110201R-FY	.250		.0039	.110							●
TCGT 21.50 LFY	TCGT 110201L-FY			.0039								●
TCGT 21.50.5 RFY	TCGT 110202R-FY			.0078								●
TCGT 21.50.5 LFY	TCGT 110202L-FY			.0078								●

TCGT EFM		Rake Angle: 6°		Cutting Conditions:		Coated	Cermet		Uncoated	
				Continuous Cut		○	●	●		
				Medium Cut		◐	●	●		
				Interrupted Cut		◑	●	●		
						ACZ310				
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1					
TCGT 630 EFM	TCGT 080201N-SC	.1875		.0039	.090	●	T2000Z	T1200A		
TCGT 630.5 EFM	TCGT 080202N-SC			.0078		●				
TCGT 1.81.50 EFM	TCGT 090201N-SC	.219	.094	.0039	.098	●				
TCGT 1.81.50.5 EFM	TCGT 090202N-SC			.0078		●				
TCGT 21.50 EFM	TCGT 110201N-SC	.250		.0039	.110	●				
TCGT 21.50.5 EFM	TCGT 110202N-SC			.0078		●				



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole

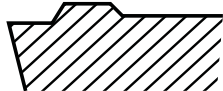
P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TPMT

EFK

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

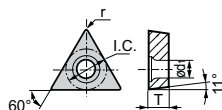
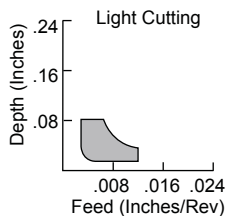
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TPMT 221 EFK	TPMT 110304N-FK	.250	.125	.0156	.110
TPMT 222 EFK	TPMT 110308N-FK			.0313	
TPMT 331 EFK	TPMT 160404N-FK	.375	.1875	.0156	.1693
TPMT 332 EFK	TPMT 160408N-FK			.0313	

T2000Z

T1200A

TPMT

ELU

Rake Angle: 12°



Cutting Conditions:

Continuous Cut

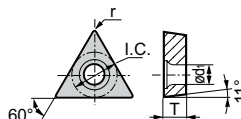
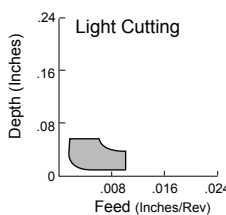
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TPMT 1.81.50.5 ELU	TPMT 090202N-LU			.0078	
TPMT 1.81.51 ELU	TPMT 090204N-LU			.0156	
TPMT 221 ELU	TPMT 110304N-LU	.250	.094	.0156	.110
TPMT 222 ELU	TPMT 110308N-LU			.0313	

AC2000

AC820P

AC700G

AC630M

ACZ310

T2000Z

T3000Z



TP

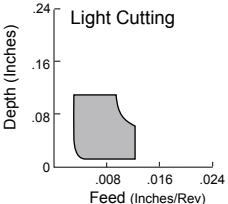
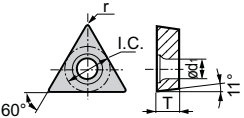
Triangular Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPMT ESU		Rake Angle: 8°		Cutting Conditions:						Coated								Cermet			Uncoated					
																										
				Continuous Cut																						
				Medium Cut																						
				Interrupted Cut																						
																										
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC610M	AC630M	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z	T1200A					
TPMT 1.81.50.5 ESU		TPMT 090202N-SU		.219	.094	.0078	.102	●		●											●					
TPMT 1.81.51 ESU		TPMT 090204N-SU				.0156	.102	●		●													●			
TPMT 21.50.5 ESU		TPMT 110202N-SU				.0078	.107	●		●		●					●	●	●	●			●			
TPMT 21.51 ESU		TPMT 110204N-SU				.0156		●		●		●					●	●	●	●			●			
TPMT 21.52 ESU		TPMT 110208N-SU		.250		.0313	.130	●		●		●									●					
TPMT 220.5 ESU		TPMT 110302N-SU				.0078		●	●	●		●	●									●		●		
TPMT 221 ESU		TPMT 110304N-SU				.0156		●	●	●		●	●									●		●		
TPMT 222 ESU		TPMT 110308N-SU				.0313		●	●	●		●	●									●		●		
TPMT 32.51 ESU		TPMT 16T304N-SU		.375	.156	.0156	.1693	●		●		●									●					
TPMT 32.52 ESU		TPMT 16T308N-SU				.0313		●	●		●	●										●		●		
TPMT 331 ESU		TPMT 160404N-SU				.0156		●	●	●		●	●									●		●		
TPMT 332 ESU		TPMT 160408N-SU				.0313		●	●	●		●	●									●		●		

TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP

Triangular Type

11° Relief

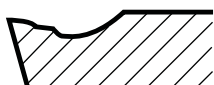
With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TPMT EMU

Rake Angle: 0°



Cutting Conditions:

Continuous Cut

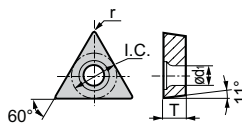
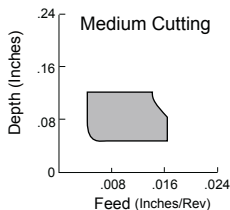
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000

AC700G

AC410K

Sumitomo Catalog #

ISO Catalog #

I.C.

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TPMT 221 EMU

TPMT 110304N-MU

.250

.125

.0156

.130

TPMT 222 EMU

TPMT 110308N-MU

.375

.1875

.0156

.1693

TPMT 331 EMU

TPMT 160404N-MU

TPMT 332 EMU

TPMT 160408N-MU

TPGT FW

Rake Angle: 20°



Cutting Conditions:

Continuous Cut

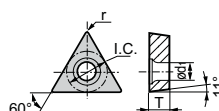
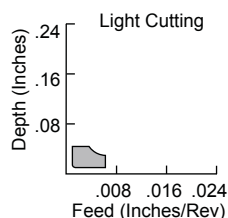
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



T2000Z

T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

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r

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TPGT 630.5 RFW

TPGT 080202R-FW

.1875

.094

.0078

.090

TPGT 630.5 LFW

TPGT 080202L-FW

.0078

TPGT 631 RFW

TPGT 080204R-FW

.0156

TPGT 631 LFW

TPGT 080204L-FW

.0156

TPGT 21.50.5 RFW

TPGT 110202R-FW

.0078

TPGT 21.50.5 LFW

TPGT 110202L-FW

.0078

TPGT 21.51 RFW

TPGT 110204R-FW

.0156

TPGT 21.51 LFW

TPGT 110204L-FW

.0156

Positive Inserts

C

D

K

R

S

T

V

W

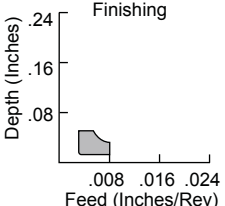
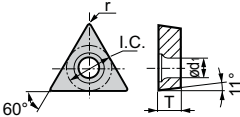
Swiss Tooling





P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPGT FX		Rake Angle: 15°		Cutting Conditions:				Coated			Cermet			Uncoated		
																
				Continuous Cut												
				Medium Cut												
				Interrupted Cut												
								AC510U EH10Z ACZ310			T1200A					
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC510U	EH10Z	ACZ310	T1200A							
TPGT 630.5 RFX	TPGT 080202R-FX	.1875		.0078	.090	●	●	●								
TPGT 630.5 LFX	TPGT 080202L-FX			.0078		●	●	●								
TPGT 631 RFX	TPGT 080204R-FX			.0156		●	●	●								
TPGT 631 LFX	TPGT 080204L-FX			.0156		●	●	●								
TPGT 1.81.51 LFX	TPGT 090204L-FX	.219	.094	.0156	.102				●							
TPGT 21.50.5 RFX	TPGT 110202R-FX	.0078		●		●										
TPGT 21.50.5 LFX	TPGT 110202L-FX	.0078		●		●										
TPGT 21.51 RFX	TPGT 110204R-FX	.0156		●		●										
TPGT 21.51 LFX	TPGT 110204L-FX	.250		.0156	.110	●	●									
TPGT 21.52 LFX	TPGT 110208L-FX			.0313		●	●									
TPGT 220.5 RFX	TPGT 110302R-FX			.0078				●								
TPGT 220.5 LFX	TPGT 110302L-FX			.0078				●								
TPGT 221 RFX	TPGT 110304R-FX	.125		.0156	.130		●									
TPGT 221 LFX	TPGT 110304L-FX			.0156			●									

TP

Triangular Type

11° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPGG SD

Rake Angle: 10°



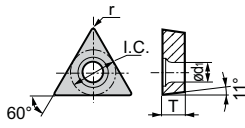
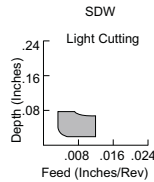
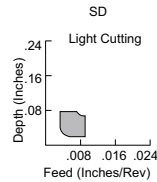
Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated	Cermet	Uncoated
● ● ●	● ● ●	
● ● ●	● ● ●	●
	● ● ●	



Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC510U	EH10Z	ACZ310	T2000Z	T3000Z	T1200A	G10E						
TPGG 220.5 R	TPGT 110302R-SD	.250	.125	.0078	.130			●	●	●	●	●						
TPGG 220.5 L	TPGT 110302L-SD			.0078					●	●	●							
TPGG 221 R	TPGT 110304R-SD			.0156		●	●	★	●	★	●							
TPGG 221 RW	TPGT 110304RW-SD			.0156					●	●	●							
TPGG 221 L	TPGT 110304L-SD			.0156		●	●	★	●	★	●	●						
TPGG 221 LW	TPGT 110304LW-SD			.0156					●	●	●							
TPGG 222 R	TPGT 110308R-SD			.0313				★			●							
TPGG 222 RW	TPGT 110308RW-SD			.0313					●	●	●							
TPGG 222 L	TPGT 110308L-SD			.0313					●	★	●							
TPGG 222 LW	TPGT 110308LW-SD			.0313					●	●	●							
TPGG 321 R	TPGT 160304R-SD	.375	.1875	.0156	.1693						●							
TPGG 321 L	TPGT 160304L-SD			.0156					●		●							
TPGG 322 R	TPGT 160308R-SD			.0313							●							
TPGG 322 L	TPGT 160308L-SD			.0313							●							
TPGG 330 R	TPGT 160401R-SD			.0039							●							
TPGG 330 L	TPGT 160401L-SD			.0039							●							
TPGG 330.5 R	TPGT 160402R-SD			.0078							●							
TPGG 330.5 L	TPGT 160402L-SD			.0078					●		●							
TPGG 331 R	TPGT 160404R-SD			.0156		●	●		●	★	●							
TPGG 331 L	TPGT 160404L-SD			.0156		●	●		●	★	●	●						
TPGG 332 R	TPGT 160408R-SD			.0313							●		★					
TPGG 332 L	TPGT 160408L-SD			.0313					●		●							

W = Wiper Insert

Positive
Inserts

C

D

K

R

S

T

V

W

Swiss
Tooling



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TPGA

No Breaker



Cutting Conditions:

Continuous Cut

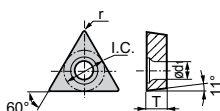
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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TPGA 220.5

TPGW 110302

TPGA 221

TPGW 110304

TPGA 222

TPGW 110308

.250

.125

.0078

.0156

.0313

.130

T1200A

G10E



TP

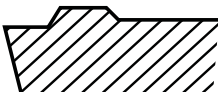
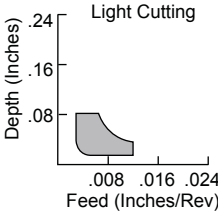
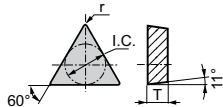
Triangular Type

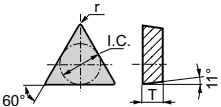
11° Relief

Without Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPMR EFK		Rake Angle: 0°		Cutting Conditions:			Coated			Cermet			Uncoated								
					Continuous Cut																
					Medium Cut																
					Interrupted Cut																
																					
Sumitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1				T2000Z	T1200A									
TPMR 1.81.50.5 EFK	TPMR 090202N-FK	.219	.094		.0078	-															
TPMR 1.81.51 EFK	TPMR 090204N-FK																				
TPMR 1.81.52 EFK	TPMR 090208N-FK																				
TPMR 220.5 EFK	TPMR 110302N-FK																				
TPMR 221 EFK	TPMR 110304N-FK	.250	.125	.0156																	
TPMR 222 EFK	TPMR 110308N-FK																				
TPMR 321 EFK	TPMR 160304N-FK																				
TPMR 322 EFK	TPMR 160308N-FK	.375		.0313																	
TPMR 323 EFK	TPMR 160312N-FK																				

TPMR ENF		Rake Angle: 0° 		Cutting Conditions:						Coated						Cermet			Uncoated																			
								Continuous Cut																														
								Medium Cut																														
								Interrupted Cut																														
																																						
SFmitomo Catalog #		ISO Catalog #		I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G																										
TPMR 221 ENF	TPMR 110304N-SF			.250		.0156		●	●	●	●																											
TPMR 222 ENF	TPMR 110308N-SF					.0313		●	●	●		●																										
TPMR 321 ENF	TPMR 160304N-SF				.125	.0156		●	●	●	●																											
TPMR 322 ENF	TPMR 160308N-SF			.375		.0313	-	●	●	●	●	●																										
TPMR 323 ENF	TPMR 160312N-SF					.0469		●	●	●																												
TPMR 432 ENF	TPMR 220408N-SF				.1875	.0313		●	●	●																												
TPMR 433 ENF	TPMR 220412N-SF			.500		.0469		●	●	●	●																											



TRIANGULAR TYPE

POSITIVE INSERT

Indexable Inserts for Turning

TP

Triangular Type

11° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPMN

No Breaker



Cutting Conditions:

Continuous Cut

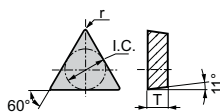
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

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AC2000

AC700G

AC410K

AC300G

T1200A

ST20E

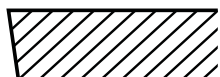
ST30E

A30

TPMN 221	TPMN 110304	.250		.0156		▲	★	★											
TPMN 222	TPMN 110308			.0313			★	★											
TPMN 321	TPMN 160304		.125	.0156		●		★										★	
TPMN 322	TPMN 160308	.375		.0313		●	●	★			★						●	●	
TPMN 323	TPMN 160312			.0469			★	★	▲									★	
TPMN 431	TPMN 220404			.0156														★	
TPMN 432	TPMN 220408		.500	.0313		●	●		▲		★						●		
TPMN 433	TPMN 220412			.0469		●	●		▲										
TPMN 434	TPMN 220416			.0625														★	★

TPG

No Breaker



Cutting Conditions:

Continuous Cut

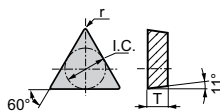
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



Sumitomo Catalog #

ISO Catalog #

I.C.

T

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ød1

AC2000

AC510U

EH10Z

EH20Z

T2000Z

T1200A

ST30E

A30

G10E

H1

TPG 220.5	TPGN 110302	.250		.0078		●						●						●	
TPG 221	TPGN 110304			.0156		●						●	●					★	
TPG 222	TPGN 110308			.0313														★	
TPG 320.5	TPGN 160302		.125	.0078		●						●	●					●	
TPG 321	TPGN 160304			.0156		●	●	●	●			●	●				●	▲	
TPG 322	TPGN 160308	.375		.0313		●	●	●	●			●	●				●	★	
TPG 323	TPGN 160312			.0469		●												●	
TPG 324	TPGN 160316			.0625		●						●							
TPG 332	TPGN 160408			.0313		●													
TPG 431	TPGN 220404			.0156		●						●							
TPG 432	TPGN 220408		.500	.0313		●	●	●	●								★	●	
TPG 433	TPGN 220412			.0469		●			▲			●							
TPG 434	TPGN 220416			.0625		●						●							
TPG 436	TPGN 220424			.0938		●													
TPG 544	TPGN 270412	.625	.250	.0625		●						●							



TE

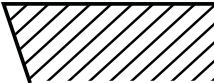
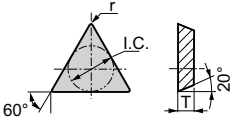
Triangular Type

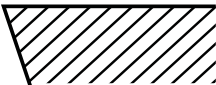
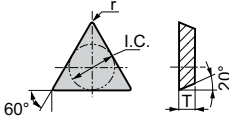
20° Relief

Without Insert Hole

- P Steel
- M Stainless Steel
- K Cast Iron
- N Non-ferrous
- S Exotic Materials
- H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TEGE		No Breaker	Cutting Conditions:					Coated					Cermet		Uncoated							
			Continuous Cut																			
			Medium Cut																			
			Interrupted Cut																			
  																						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1											H1						
TEGE 21.50.5	TEGE 110202			.0078												●						
TEGE 21.51	TEGE 110204	.250	.094	.0156	-											●						

TEGN		No Breaker	Cutting Conditions:						Coated				Cermet				Uncoated									
			Continuous Cut																							
			Medium Cut																							
			Interrupted Cut																							
 																										
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1							T1200A					A30	H1								
TEGN 220.5	TEGN 110302	.250	.125	.0078	-													●								
TEGN 221	TEGN 110304			.0156																★						
TEGN 222	TEGN 110308			.0313																★						
TEGN 320.5	TEGN 160302	.375		.0078	-													●								
TEGN 321	TEGN 160304			.0156																★						
TEGN 322	TEGN 160308			.0313																★						
TEGN 431	TEGN 220404	.500	.1875	.0156								★						★								



35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VB

35° Diamond Type

5° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

VBMT ENK

Rake Angle: 8°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated

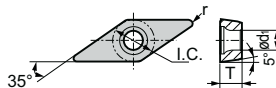
● ●

● ●

● ●



Light Cutting



AC2000

AC820P

Sumitomo Catalog #

ISO Catalog #

I.C.

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VBMT 332 ENK

VBMT 160408N-SK

.375

.1875

.0313

.1732

●

○

VBMT ELU

Rake Angle: 12°



Cutting Conditions:

Continuous Cut

Medium Cut

Interrupted Cut

Coated

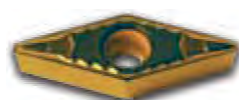
Cermet

Uncoated

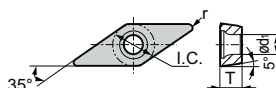
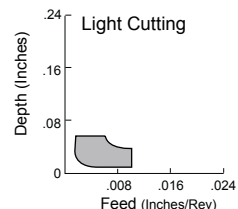
● ● ● ●

● ● ● ●

● ● ● ●



Light Cutting



AC2000

AC820P

AC700G

AC630M

ACZ310

Sumitomo Catalog #

ISO Catalog #

I.C.

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VBMT 221 ELU

VBMT 110304N-LU

.250

.125

.0156

.134

●

○

VBMT 331 ELU

VBMT 160404N-LU

.375

.1875

.0156

.1732

●

○

VBMT 332 ELU

VBMT 160408N-LU

.375

.1875

.0313

.1732

●

○

T2000Z

T3000Z

VBMT 221 ELU

VBMT 110304N-LU

.250

.125

.0156

.134

●

○

VBMT 331 ELU

VBMT 160404N-LU

.375

.1875

.0156

.1732

●

○

VBMT 332 ELU

VBMT 160408N-LU

.375

.1875

.0313

.1732

●

○



VB

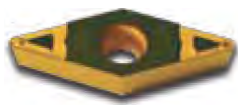
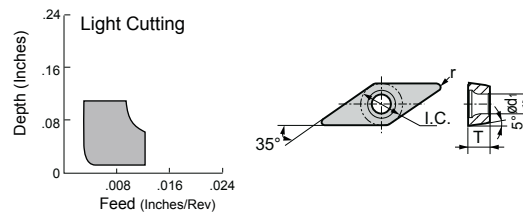
35° Diamond Type

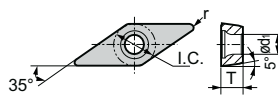
5° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VBMT ESU	Rake Angle: 8° 	Cutting Conditions:						Coated								Cermet			Uncoated						
								Continuous Cut																	
								Medium Cut																	
								Interrupted Cut																	
 																									
																									
																									
																									
																									
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	AC2000	AC3000	AC820P	AC830P	AC700G	AC610M	AC630M	AC510U	AC520U	EH510Z	EH520Z	T2000Z	T3000Z	T1200A						
VBMT 221 ESU	VBMT 110304N-SU	.250	.125	.0156	.134	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●					
VBMT 222 ESU	VBMT 110308N-SU			.0313		●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●				
VBMT 331 ESU	VBMT 160404N-SU	.375	.1875	.0156	.1732	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●					
VBMT 332 ESU	VBMT 160408N-SU			.0313		●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●				

VBMA	No Breaker 	Cutting Conditions:						Coated				Cermet				Uncoated			
								Continuous Cut											
								Medium Cut											
								Interrupted Cut											
  								AC700G	AC410K										
		Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1												
VBMA 331		VBMA 160404		.375	.1875	.0156	.1732	★	★										
VBMA 332		VBMA 160408				.0313		★	★										



35° DIAMOND TYPE POSITIVE INSERT

Indexable Inserts for Turning

VC

35° Diamond Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

Positive
Inserts

C

D

K

R

S

T

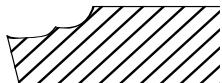
V

W

Swiss
Tooling

VCMT EFP

Rake Angle: 10°



Cutting Conditions:

Continuous Cut

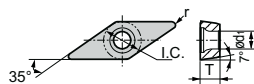
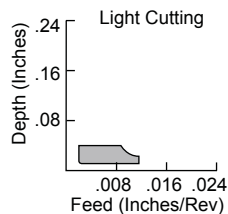
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



T2000Z
T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

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VCMT 331 EFP

VCMT 160404N-FP

.375

.1875

.0156

.1732

VCMT 332 EFP

VCMT 160408N-FP

.375

.1875

.0313

VCMT ENK

Rake Angle: 8°



Cutting Conditions:

Continuous Cut

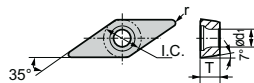
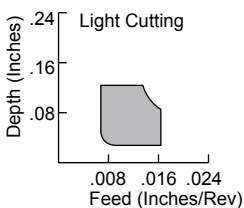
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000
AC3000
AC820P
AC830P

Sumitomo Catalog #

ISO Catalog #

I.C.

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VCMT 331 ENK

VCMT 160404N-SK

.375

.1875

.0156

.1732

VCMT 332 ENK

VCMT 160408N-SK

.375

.1875

.0313

VCMT ESU

Rake Angle: 8°



Cutting Conditions:

Continuous Cut

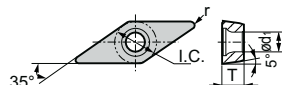
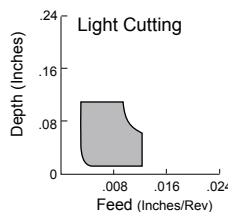
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



AC2000
AC3000
AC820P
AC610M
AC630M
AC510U
AC520U
EH510Z
EH520Z

Sumitomo Catalog #

ISO Catalog #

I.C.

T

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VCMT 331 ESU

VCMT 160404N-SU

.375

.1875

.0156

.1732

VCMT 332 ESU

VCMT 160408N-SU

.375

.1875

.0313



VC

35° Diamond Type

7° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VCMT ELU		Rake Angle: 12°		Cutting Conditions:		Coated				Cermets		Uncoated	
				Continuous Cut		●	●	●	●		●		
				Medium Cut		●	●	●	●		●	●	
				Interrupted Cut		●	●	●	●		●		
						AC2000	AC820P	AC700G	AC630M		T2000Z	T3000Z	
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
VCMT 331 ELU	VCMT 160404N-LU			.0156		●	○	●	●		●		
VCMT 332 ELU	VCMT 160408N-LU	.375	.1875	.0313	.1732	●	○	●	●		●	●	

VCGT NAG		Rake Angle: 8°		Cutting Conditions:		Coated				Cermets		Uncoated	
				Continuous Cut							●		
				Medium Cut							●		
				Interrupted Cut									
											H1		
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
VCGT 220.5 NAG	VCGT 110302N-AG			.0078							●		
VCGT 221 NAG	VCGT 110304N-AG	.250	.125	.0156	.134						●		
VCGT 332 NAG	VCGT 160408N-AG	.375	.1875	.0313	.1732						★		

VCGT EFC		Rake Angle: 15°		Cutting Conditions:		Coated				Cermets		Uncoated	
				Continuous Cut		○	●						
				Medium Cut			●						
				Interrupted Cut			●						
						ACZ150	AC530U						
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1								
VCGT 220 EFC	VCGT 110301N-FC			.0039		★	●						
VCGT 220.5 EFC	VCGT 110302N-FC	.250	.125	.0078	.134	★	●						
VCGT 221 EFC	VCGT 110304N-FC			.0156		★	●						



VP

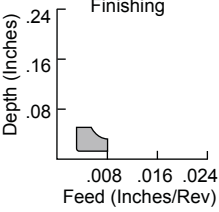
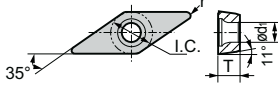
35° Diamond Type

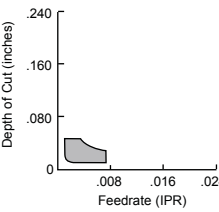
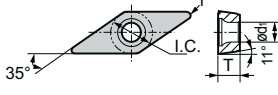
11° Relief

With Insert Hole

P Steel
M Stainless Steel
K Cast Iron
N Non-ferrous
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VPGT FX	Rake Angle: 15° 	Cutting Conditions:						Coated	Cermet	Uncoated
  	Finishing Depth (Inches) .24 .16 .08 .008 .016 .024 Feed (Inches/Rev)									
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	ACZ310				
VPGT 220 RFX	VPGT 110301R-FX	.250	.125	.0039	.134	●				
VPGT 220 LFX	VPGT 110301L-FX			.0039		●				
VPGT 220.5 RFX	VPGT 110302R-FX			.0078		●				
VPGT 220.5 LFX	VPGT 110302L-FX			.0078		●				

VPGT FY	Rake Angle: 15° 	Cutting Conditions:						Coated	Cermet	Uncoated
  	Depth of Cut (Inches) .240 .160 .080 0 .008 .016 .024 Feedrate (IPR)									
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1	ACZ310				
VPGT 220 RFY	VPGT 110301R-FY	.250	.125	.0039	.134	●				
VPGT 220 LFY	VPGT 110301L-FY			.0039		●				
VPGT 220.5 RFY	VPGT 110302R-FY			.0078		●				
VPGT 220.5 LFY	VPGT 110302L-FY			.0078		●				



80° TRIGON TYPE

POSITIVE INSERT

Indexable Inserts for Turning

WB

80° Trigon Type

5° Relief

With Insert Hole

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WBGT

FW

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

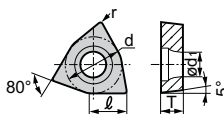
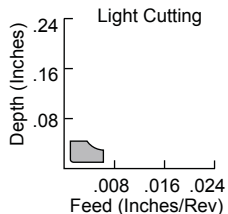
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



T2000Z

T1200A

Sumitomo Catalog #

ISO Catalog #

I.C.

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WBGT 520.5 RFW	WBGT 030302R-FW	.156	.0625	.0078	.090
WBGT 520.5 LFW	WBGT 030302L-FW			.0078	
WBGT 521 RFW	WBGT 030304R-FW			.0156	
WBGT 521 LFW	WBGT 030304L-FW			.0156	
WBGT 630.5 RFW	WBGT 060402R-FW	.1875	.094	.0078	
WBGT 630.5 LFW	WBGT 060402L-FW			.0078	
WBGT 631 RFW	WBGT 060404R-FW			.0156	
WBGT 631 LFW	WBGT 060404L-FW			.0156	

WBGT

FX

Rake Angle: 15°



Cutting Conditions:

Continuous Cut

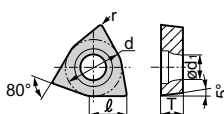
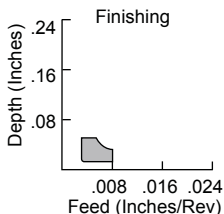
Medium Cut

Interrupted Cut

Coated

Cermet

Uncoated



ACZ310

Sumitomo Catalog #

ISO Catalog #

I.C.

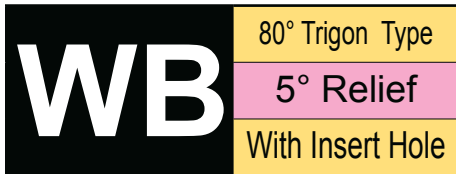
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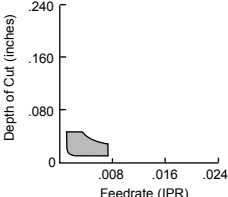
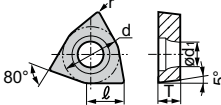
WBGT 520.5 RFX	WBGT 030302R-FX	.156	.0625	.0078	.090
WBGT 521 RFX	WBGT 030304R-FX			.0156	
WBGT 630.5 RFX	WBGT 060402R-FX			.0078	
WBGT 630.5 LFX	WBGT 060402L-FX			.0078	
WBGT 631 RFX	WBGT 060404R-FX	.1875	.094	.0156	
WBGT 631 LFX	WBGT 060404L-FX			.0156	

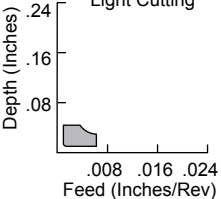
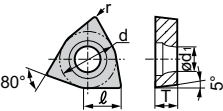
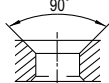




- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WBGT FY		Rake Angle: 15°	Cutting Conditions:						Coated		Cermet		Uncoated					
									Continuous Cut									
									Medium Cut									
									Interrupted Cut									
									ACZ310		T1200A							
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ød1													
WBGT 520.5 RFY	WBGT 030302R-FY	.156	.125	.0078	.090													
WBGT 520.5 LFY	WBGT 030302L-FY			.0078														
WBGT 521 RFY	WBGT 030304R-FY			.0156														
WBGT 521 LFY	WBGT 030304L-FY			.0156														

WBGT		Rake Angle: 10°	Cutting Conditions:						Coated			Cermet			Uncoated						
W																					
			Continuous Cut																		
			Medium Cut																		
			Interrupted Cut																		
		Light Cutting 	 																		
Sumitomo Catalog #		ISO Catalog #	I.C.	T	r	ød1				T2000Z			T1200A								
WBGT 520.5 R		WBGT 030302R-FW	.156	.0625	.0078	.090															
WBGT 520.5 L		WBGT 030302L-FW			.0078																
WBGT 521 R		WBGT 030304R-FW			.0156																
WBGT 521 L		WBGT 030304L-FW			.0156																



Swiss Tooling Inserts

for precision turning applications:

- Cut-off
- Back Turn
- Boring Rough
- Boring Finishing

- P** Steel
- M** Stainless Steel
- K** Cast Iron
- N** Non-ferrous
- S** Exotic Materials
- H** Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CTR for SCT Type Holder (p. 204)		R N L *Dimensions in mm					Coated			Cermet			Uncoated				
Sumitomo Catalog #	ISO Catalog #	t	R	W	H	ACZ310											
CTR121005R	CTR121005R	1.0	0.05	19.0	7.0		●										
CTR121005N	CTR121005N						●										
CTR121005L	CTR121005L						●										
CTR121505R	CTR121505R	1.5					●										
CTR121505N	CTR121505N						●										
CTR121505L	CTR121505L						●										
CTR122005R	CTR122005R	2.0					●										
CTR122005N	CTR122005N						●										
CTR122005L	CTR122005L						●										

Maximum cut-off diameter = 12.0 mm

BTR for SBT Type Holder (p. 204)						Coated	Cermet	Uncoated
Sumitomo Catalog #	ISO Catalog #	I.C.	T	r	ACZ310		T1200A	
BTR3505	BTR3505	6.8	3.8	0.05	●		★	
BTR3515	BTR3515			0.15	●		★	



Swiss Tooling Inserts (cont.)

for precision turning applications:

- Cut-off
- Back Turn
- Boring Rough
- Boring Finishing

P Steel

M Stainless Steel

K Cast Iron

N Non-ferrous

S Exotic Materials

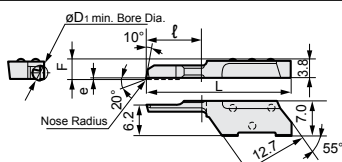
H Hardened Steel

● USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

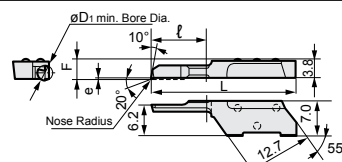
Boring Rough Inserts (p. 205 for holder)



ACZ310

Sumitomo Catalog #	Dimensions (mm)						
	Min. Bore Dia.	F	e	Nose Radius	L	l	
KBMXR0103-05	1.0	4.0	0.2	0.05	20.5	3	●
KBMXR0206-05	2.0	4.05	0.25	0.05	23.5	6	●
KBMXR0411-05	4.0	4.30	0.5	0.05	28.5	11	●
KBMXR0411-20	4.0	4.30	0.5	0.20	28.5	11	●
KBMXR0511-05	5.0	4.50	0.7	0.05	28.5	11	●
KBMXR0511-20	5.0	4.50	0.7	0.20	28.5	11	●

Boring Finishing Inserts (p. 205 for holder)

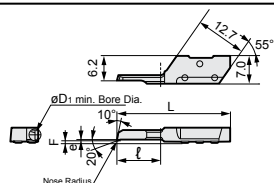


ACZ150

Sumitomo Catalog #	Dimensions (mm)						
	Min. Bore Dia.	F	e	Nose Radius	L	l	
KBMXR0103-05T	1.0	4.0	0.2	0.05	20.5	3	●
KBMXR0206-05T	2.0	4.05	0.25	0.05	23.5	6	●
KBMXR0411-05T	4.0	4.30	0.5	0.05	28.5	11	●
KBMXR0411-20T	4.0	4.30	0.5	0.20	28.5	11	●
KBMXR0511-05T	5.0	4.50	0.7	0.05	28.5	11	●
KBMXR0511-20T	5.0	4.50	0.7	0.20	28.5	11	●

T = Free cutting

Boring Rough Inserts (p. 205 for holder)

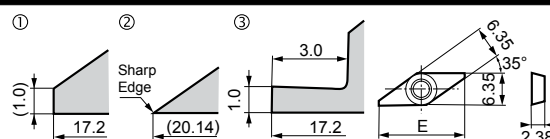


ACZ310

Sumitomo Catalog #	Dimensions (mm)						
	Min. Bore Dia.	F	e	Nose Radius	L	l	
KBMXL0206-05R	2.0	4.05	0.25	0.05	23.5	6	●
KBMXL0411-05R	4.0	4.30	0.5	0.05	28.5	11	●
KBMXL0411-20R	4.0	4.30	0.5	0.20	28.5	11	●

Blank Inserts for SPB Type holder (p. 205)

Uncoated

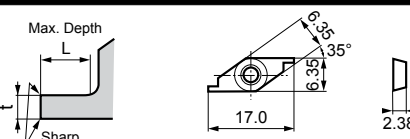


Sumitomo Catalog #	Dim. E (mm)	Application	Fig.			
PBVX1102R-NB	17.2	General	1	●		
PBVX1102R-SB	20.14	Sharp Edge	2	●		
PBVX1102R-BB	14.2	Special	3	●		

Note: Special jigs are available for insert grinding

Grooving Inserts for SPB Type holder (p. 205)

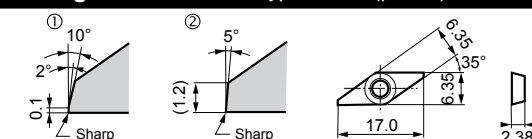
Uncoated



Sumitomo Catalog #	Dimensions (mm)				
	Groove Depth	t			
PBVG1102R-030	0.5	0.3	●		
PBVG1102R-050	1.0	0.5	●		
PBVG1102R-100	2.0	1.0	●		

Turning Inserts for SPB Type holder (p. 205)

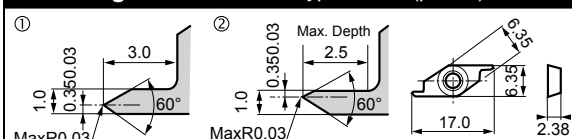
Uncoated



Sumitomo Catalog #	Dim. Cutter Edge (mm)	Wiper Edge	Fig.			
PBVF1102R	17.2	General	1	●		
PBVF1102R	14.2	Special	3	●		

Threading Inserts for SPB Type holder (p. 205)

Uncoated



Sumitomo Catalog #	Dimension Pitch (mm)	Fig.			
PBVT1102R	0.2 ~ 0.5	1	●		
PBVT1102R	0.2 ~ 0.5	2	●		



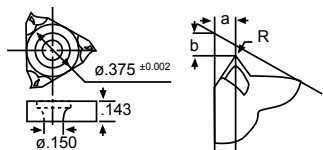


Threading,
Grooving, &
Cut-Off Inserts

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Cut-Off Inserts.....	147





- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

EXTERNAL LAYDOWN - Full Profile (ISO Metric)

Cat. No.	Pitch/mm	Threads/in	Stock Grade				R	Included Angle e°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TME100R	1.00	-	●	●	●	●	.0050	60	.031	.047
TME125R	1.25	-	●	●	●	●	.0067		.039	
TME150R	1.50	-	●	●	●	●	.0080		.047	
TME175R	1.75	-	●	●	●	●	.0094		.055	
TME200R	2.00	-	●	●	●	●	.0106		.071	
TME250R	2.50	-	●	●	●	●	.0140			
TME300R	3.00	-	●	●	●	●	.0165			

Full Profile (Inch)

Cat. No.	Threads/in	Pitch/mm	Stock Grade				R	Included Angle e°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TUE24R	24	-	●	●	●	●	.0047	60	.031	.047
TUE20R	20	-	●	●	●	●	.0059		.039	
TUE18R	18	-	●	●	●	●	.0067		.047	
TUE16R	16	-	●	●	●	●	.0079		.055	
TUE14R	14	-	●	●	●	●	.0091		.071	
TUE12R	12	-	●	●	●	●	.0110			
TUE08R	8	-	●	●	●	●	.0169			

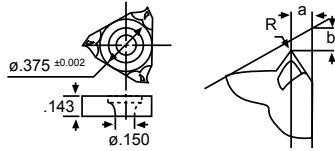
Partial Profile (60°)

Cat. No.	Pitch/mm	Threads/in	Stock Grade				R	Included Angle e°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TME1020R	1.0~2.0	24~12	●	●	●	●	.005	60	.043	.047
TME1530R	1.50~3.00	16~8	●	●	●	●	.008		.063	.039

Partial Profile (55°)

Cat. No.	Inch	Threads/in	Stock Grade				R	Included Angle e°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TWE1410R	-	14~10	●	●	●	●	.009	55	.055	.047
TWE2416R	-	24~16	●	●	●	●	.005			





- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

INTERNAL LAYDOWN - Full Profile (ISO Metric)

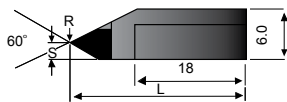
Cat. No.	Pitch/mm	Threads/in	Stock Grade				R	Included Angle θ°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TMI100R	1.00	-	●	●	●	●	.0024	60	.031	.047
TMI125R	1.25	-	●	●	●	●	.0030		.039	
TMI150R	1.50	-	●	●	●	●	.0035		.047	
TMI175R	1.75	-	●	●	●	●	.0043		.055	
TMI200R	2.00	-	●	●	●	●	.0050		.071	
TMI250R	2.50	-	●	●	●	●	.0063			
TMI300R	3.00	-	●	●	●	●	.0080			

Partial Profile (60°)

Cat. No.	Pitch/mm	Threads/in	Stock Grade				R	Included Angle θ°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TMI1020R	1.0~2.0	24~12	●	●	●	●	.0024	60	.039	.047
TMI1530R	1.50~3.00	16~8	●	●	●	●	.0035		.060	

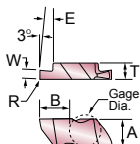
Partial Profile (NPT)

Cat. No.	Pitch/mm	Threads/in	Stock Grade				R	Included Angle θ°	a	b
			Uncoated	Coated		Cermet				
			A30	EH20Z	AC225	T130A				
TNPT1115R	-	11.5	●	●	●	●	.004	60	.059	.043



THREADING INSERTS FOR BGG HOLDERS

Cat. No.	Pitch/mm	Threads/in	CBN		R	L	S
			BN250	BN600			
			●	●			
BNTT1020R	1.0~2.0	-	●	●	.13	25.0	2.0
BNTT1530R	1.50~3.00	-	●	●	.20		



- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SUMINOTCH GROOVING INSERTS

Left		Dimensions (in)								Right	
SG	Coated									SG	Coated
	EH520V	BN250	BN350	W ±.001	R	E ±.001	T	A	B	Gage Dia.	EH520V
SG-2031L	●			.031	.002/.005	.050					●
SG-2041L	●			.041	.002/.005	.050					●
SG-2047L	●			.047	.002/.005	.050					●
SG-2058L	●			.058	.005/.010	.050	.150	.219	.2700	.1875	●
SG-2062L	●			.062	.005/.010	.110					●
SG-2094L	●			.094	.005/.010	.110					●
SG-2125L	●			.125	.005/.010	.110					●
SG-3047L	●			.047	.005/.010	.075					●
SG-3062L	●	●	●	.062	.005/.010	.094					●
SG-3072L	●			.072	.005/.010	.094					●
SG-3088L	●			.088	.005/.010	.094					●
SG-3094L	●	●	●	.094	.005/.010	.150					●
SG-3097L	●			.097	.005/.010	.150					●
SG-3105L	●			.105	.005/.010	.150					●
SG-3110L	●			.110	.110/.015	.150	.195	.344	.4050	.3750	●
SG-3122L	●			.122	.005/.010	.150					●
SG-3125L	●	●	●	.125	.005/.010	.150					●
SG-3142L	●			.142	.005/.010	.150					●
SG-3156L	●			.156	.005/.010	.150					●
SG-3178L	●			.178	.005/.010	.150					●
SG-3185L	●			.185	.020/.025	.150					●
SG-3189L	●			.189	.020/.025	.150					●
SG-2031R	●										●
SG-2041R	●										●
SG-2047R	●										●
SG-2058R	●										●
SG-2062R	●										●
SG-2094R	●										●
SG-2125R	●										●
SG-3047R	●										●
SG-3062R	●	●	●								●
SG-3072R	●										●
SG-3088R	●										●
SG-3094R	●	●	●								●
SG-3097R	●										●
SG-3105R	●										●
SG-3110R	●										●
SG-3122R	●										●
SG-3125R	●	●	●								●
SG-3142R	●										●
SG-3156R	●										●
SG-3178R	●										●
SG-3185R	●										●
SG-3189R	●										●

Left		Dimensions (in)							Right										
SG-CB	Coated								W ±.001	R	E ±.001	T	A	B	Gage Dia.	SG-CB	Coated		
	EH520V	EH520V																	
	SG-2047L-CB	●	.047	.002/.005	.050	.150	.219	.2700									.1875	SG-2047R-CB	●
	SG-2062L-CB	●	.062	.005/.010	.110													SG-2062R-CB	●
	SG-2078L-CB	●	.078	.005/.010	.110													SG-2078R-CB	●
	SG-2094L-CB	●	.094	.005/.010	.110													SG-2094R-CB	●
	SG-2125L-CB	●	.125	.005/.010	.110													SG-2125R-CB	●
	SG-3047L-CB	●	.047	.005/.010	.075	.195	.344	.4050									.3750	SG-3047R-CB	●
	SG-3062L-CB	●	.062	.005/.010	.094													SG-3062R-CB	●
	SG-3072L-CB	●	.072	.005/.010	.094													SG-3072R-CB	●
SG-3078L-CB	●	.088	.005/.010	.094	SG-3078R-CB				●										
SG-3088L-CB	●	.094	.005/.010	.150	SG-3088R-CB				●										
SG-3094L-CB	●	.097	.005/.010	.150	SG-3094R-CB				●										
SG-3125L-CB	●	.185	.020/.025	.150	SG-3125R-CB				●										
SG-3189L-CB	●	.189	.020/.025	.150	SG-3189R-CB				●										

GROOVING INSERTS FOR CF & PFE HOLDERS

CFB		PFT		
Catalog No.	Uncoated	Dimensions (in)		Holder Cat. No.
	G10E	B	T	
CFB3	●			CF3-3
CFB3T	●	.118	.1875	
CFB5T	●			CF4-5
Catalog No.	Coated	Dimensions (in)		Holder Cat. No.
	AC2000	T		
PFT03	●	.118		PFER 160-3
PFT04	●	.157		PFER 160-4
PFT05	●	.157		PFER 160-5

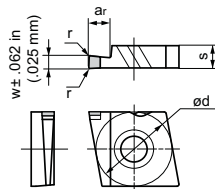




BNC30G



BN250



- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

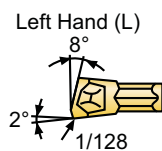
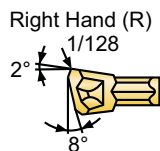
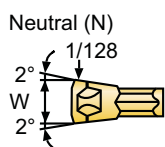
GROOVING INSERTS FOR GWB HOLDERS

CGA	Coated	Uncoated	Dimensions					
	BNC30G	BN250	W ±.001 in ±.025 (mm)	a _r in (mm)	r in (mm)	ød in (mm)	s in (mm)	
CGAR 4062	●	●	.062 (1.575)	.1378 (3.5)	.0078 (.2)	.625 (15.875)	.1875 (4.76)	
CGAL 4062								
CGAR 4094	●	●	.094 (2.388)	.1575 (4.0)				
CGAL4094								
CGAR 4125	●	●	.125 (3.175)	.1969 (5.0)				
CGAL 4125								
CGAR 6189	●	●	.189 (4.801)				.25 (6.35)	
CGAL 6189								
CGAR 1504150	●	●	.0591 (1.5)	.1378 (3.5)	.0078 (.2)	.625 (15.875)	.1875 (4.76)	
CGAL 1504150								
CGAR 1504200	●	●	.0787 (2.0)	.1575 (4.0)				
CGAL 1504200								
CGAR 1504250	●	●	.0984 (2.5)					
CGAL 1504250								
CGAR 1504300	●	●	.1181 (3.0)	.1969 (5.0)				
CGAL 1504300								
CGAR 1504350	●	●	.1378 (3.5)					
CGAL 1504350								
CGAR 1504400	●	●	.1575 (4.0)					
CGAL 1504400								
CGAR 1504450	●	●	.1772 (4.5)					
CGAL 1504450								
CGAR 1506500	●	●	.1969 (5.0)					
CGAL 1506500								
CGAR 1506550	●	●	.2165 (5.5)					
CGAL 1506550								
CGAR 1506600	●	●	.2362 (6.0)					
CGAL 1506600							.25 (6.35)	

GROOVING INSERTS FOR BNGG HOLDERS

BNGNT	CBN					Dimensions (mm)					
	BN250	BN300	BN350	BN500	BN600	W	I	R	L	S	
BNGNT0200L	●					2.0	4.0	0.2	25.0	6.0	
BNGNT0200R	●	▲	●	●	●	2.0	4.0	0.2	25.0	6.0	
BNGNT0250L	●					2.5	4.0	0.2	25.0	6.0	
BNGNT0250R	●	▲		●	●	2.5	4.0	0.2	25.0	6.0	
BNGNT0300L	●					3.0	5.0	0.4	25.0	6.0	
BNGNT0300R	●	▲	●	●	●	3.0	5.0	0.4	25.0	6.0	
BNGNT0400L	●					4.0	6.0	0.4	26.0	6.0	
BNGNT0400R	●	▲	●	●	●	4.0	6.0	0.4	26.0	6.0	
BNGNT0500L	●					5.0	6.0	0.4	26.0	6.0	
BNGNT0500R	●	▲		●	●	5.0	6.0	0.4	26.0	6.0	
BNGNT0600L	●					6.0	7.0	0.4	27.0	6.0	
BNGNT0600R	●	▲		●	●	6.0	7.0	0.4	27.0	6.0	





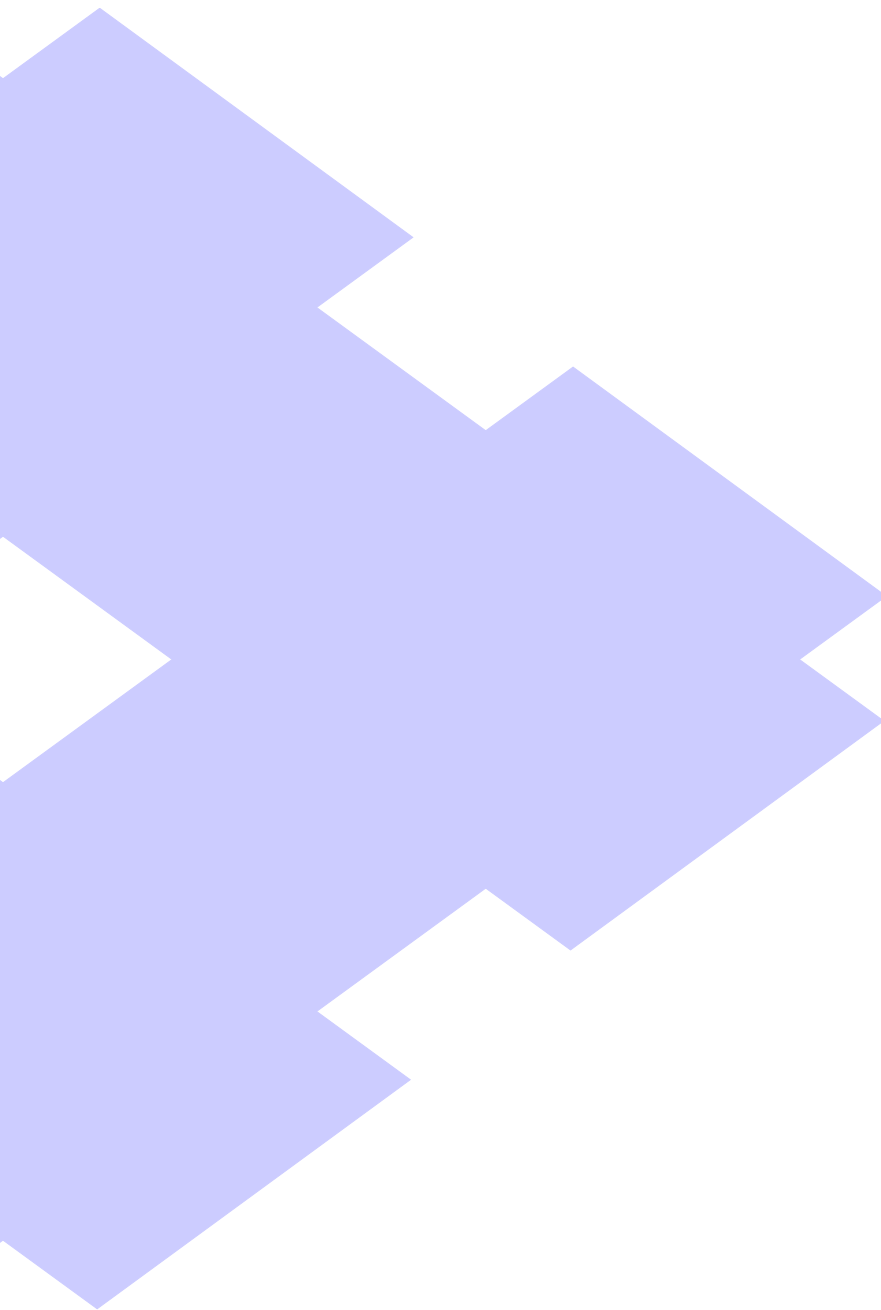
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CUT-OFF INSERTS

WCF□□□ General Steel			WCF□□OA Hard to cut materials Slow feed					WCF□□OB Cast Iron Aluminum alloy			
											
Cat. No.	Coated AC3000	W	Cat. No.	Coated AC225	Cermet T130A	Uncoated		W	Cat. No.	Uncoated G10E	W
WCFN2T	●	.0787									
WCFR2T	●										
WCFL2T	●										
WCFN3	●	.1181	WCFN3A	●	●	●	●	.1181	WCFN3B	●	.1181
WCFR3	●		WCFR3A	●	●	●	▲		WCFR3B	●	
WCFL3	●		WCFL3A	●	●	●	●		WCFL3B	●	
WCFN4	●	.1575	WCFN4A	●	●	●	●	.1575	WCFN4B	●	.1575
WCFR4	●		WCFR4A	●	●	●	▲		WCFR4B	●	
WCFL4	●		WCFL4A	●	●	●	●		WCFL4B	●	
WCFN5	●	.1969	WCFN5A	●	●	●	●	.1969	WCFN5B	●	.1969
WCFR5	●		WCFR5A	●	●	●	●		WCFR5B	●	
WCFL5	●		WCFL5A	●	●	●	●		WCFL5B	●	

*For use with the WCFH and the STFH support blades or the STFS cut-off tool holder





Ceramic Inserts

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Ceramic Inserts:	Pages
Ceramic Inserts.....	149-153

NS260 → Rough turning and milling of cast iron

NS260C → Wet or dry continuous turning of cast iron

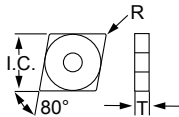
NS30 → Rough turning and milling of cast iron

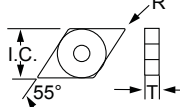
NB90S → High speed finish turning of hardened steels

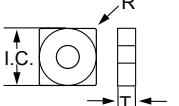
NEW WX2000 → High speed turning of super alloys

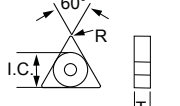
K Cast Iron
S Exotic Materials
H Hardened Steel

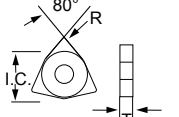
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMA	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
CNMA 432			.0313		●	●
CNMA 433	.500	.1875	.0469	.2031	●	●
CNMA 434			.0625		●	●

DNMA	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
DNMA 432			.0313		●	●
DNMA 433	.500	.1875	.0469	.2031	●	●

SNMA	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
SNMA 432			.0313		●	●
SNMA 433	.500	.1875	.0469	.2031	●	●

TNMA	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
TNMA 332			.0313		●	●
TNMA 333	.375	.1875	.0469	.2031	●	●
TNMA 334			.0625		●	●

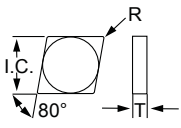
WNMA	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
WNMA 432			.0313		●	●
WNMA 433	.500	.1875	.0469	.2031	●	●

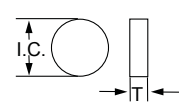


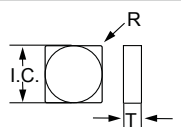
NS260	→	Rough turning and milling of cast iron
NS260C	→	Wet or dry continuous turning of cast iron
NS30	→	Rough turning and milling of cast iron
NB90S	→	High speed finish turning of hardened steels
WX2000	→	High speed turning of super alloys

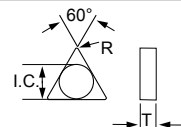
K Cast Iron
S Exotic Materials
H Hardened Steel

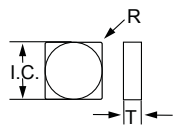
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNMN	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
CNMN 432			.0313		●	●
CNMN 433	.500	.1875	.0469	-	●	●
CNMN 434			.0625		●	●

RNMN	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
RNMN 43	.500	.1875	-	-	●	●

SNMN	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
SNMN 432			.0313		●	●
SNMN 433	.500	.1875	.0469	-	●	●
SNMN 434			.0625		●	●
SNMN 435			.0781		●	●

TNMN	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
TNMN 332			.0313		●	●
TNMN 333	.375	.1875	.0469	-	●	●
TNMN 334			.0625		●	●

SPMN	Cutting Conditions:				Grades	
	Continuous Cut				●	●
	Medium Cut				●	●
	Interrupted Cut				●	●
					NS260C	NS260
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS260C	NS260
SPMN 422	.500	.125	.0313	-	●	●
SPMN 423			.0469		●	●



NS260 → Rough turning and milling of cast iron

NS260C → Wet or dry continuous turning of cast iron

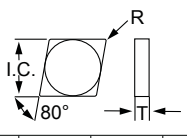
NS30 → Rough turning and milling of cast iron

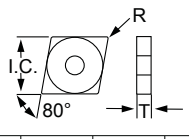
NB90S → High speed finish turning of hardened steels

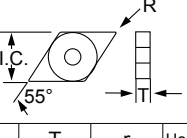
NEW WX2000 → High speed turning of super alloys

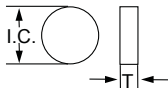
K Cast Iron
S Exotic Materials
H Hardened Steel

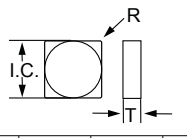
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CNG		Cutting Conditions:				Grades		
		Continuous Cut						
		Medium Cut						
		Interrupted Cut						
								
Sumitomo Catalog #	I.C.	T	r	Hole Dia.		NS30	WX2000	NB90S
CNG 432	.500	.1875	.0313	-		●	●	●
CNG 433			.0469			●	●	●
CNG 434			.0625			▲	●	●
CNG 452			.0313			●	●	●
CNG 453			.0469			●	●	●
CNG 454			.0625			●	●	●
CNG 643	.750	.250	.0469			●	●	●

CNGA		Cutting Conditions:				Grades		
		Continuous Cut						
		Medium Cut						
		Interrupted Cut						
								
Sumitomo Catalog #	I.C.	T	r	Hole Dia.		NS30	WX2000	NB90S
CNGA 431	.500	.1875	.0156	.2031		●	●	●
CNGA 432			.0313			●	●	●
CNGA 433			.0469			●	●	●
CNGA 434			.0625			●	●	●
CNGA 543	.625	.250	.0469	.250		●	●	●
CNGA 544			.0625			●	●	●

DNGA		Cutting Conditions:				Grades		
		Continuous Cut						
		Medium Cut						
		Interrupted Cut						
								
Sumitomo Catalog #	I.C.	T	r	Hole Dia.		NS30	WX2000	NB90S
DNGA 432	.500	.1875	.0313	.2031		●	●	●
DNGA 433			.0469			●	●	●
DNGA 543			.0469			▲	●	●

RNG		Cutting Conditions:				Grades					
		Continuous Cut									
		Medium Cut									
		Interrupted Cut									
											
Sumitomo Catalog #	I.C.	T	r	Hole Dia.	NS30				WX2000	NR90S	
RNG 32	.375	.125	-	-							
RNG 33		.1875									
RNG 43	.500	.3125									
RNG 45											

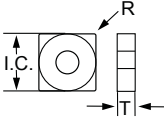
SNG		Cutting Conditions:				Grades		
		Continuous Cut						
		Medium Cut						
		Interrupted Cut						
								
Sumitomo Catalog #	I.C.	T	r	Hole Dia.		NS30	WX2000	NB90S
SNG 322	.375	.125	.0313	-		●	●	▲
SNG 432	.500	.1875	.0313			●	●	●
SNG 433			.0469			●	●	●
SNG 454			.0625			▲	●	●

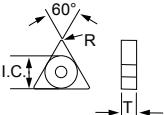


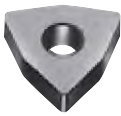
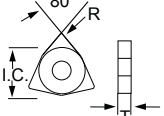
NS260	➔	Rough turning and milling of cast iron
NS260C	➔	Wet or dry continuous turning of cast iron
NS30	➔	Rough turning and milling of cast iron
NB90S	➔	High speed finish turning of hardened steels
WX2000	➔	High speed turning of super alloys

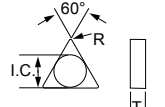
K Cast Iron
S Exotic Materials
H Hardened Steel

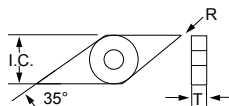
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SNGA	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
SNGA 432			.0313			●	
SNGA 433	.500	.1875	.0469	.2031	▲	●	
SNGA 434			.0625		●	●	

TNGA	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
TNGA 321		.125	.0156			●	
TNGA 322			.0313			●	
TNGA 332	.375		.0313	.150		●	
TNGA 333			.0469			●	
TNGA 432		.1875	.0313			●	
TNGA 433			.0469		▲	●	
TNGA 434	.500		.0625	.2031		●	
TNGA 438			.1250		▲	●	
TNGA 543	.625	.250	.0469	.250		●	
TNGA 544			.0625			●	

WNGA	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
WNGA 432	.500	.1875	.0313	.2031		●	
WNGA 433			.0469		●	●	

TNG	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
TNG 221			.0156			●	
TNG 222	.250	.125	.0313			●	
TNG 321			.0156			●	
TNG 322			.0313			●	
TNG 331	.375		.0156			●	
TNG 332		.1875	.0313			●	
TNG 432			.0313			●	
TNG 433	.500		.0469			●	

VNGA	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
VNGA 331			.0156			●	
VNGA 332	.375	.1875	.0313	.150		●	
VNGA 333			.0469		▲	●	
VNGA 432			.0313			●	
VNGA 433	.500		.0469	.2031		●	



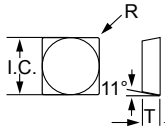
NS260	➔	Rough turning and milling of cast iron
NS260C	➔	Wet or dry continuous turning of cast iron
NS30	➔	Rough turning and milling of cast iron
NB90S	➔	High speed finish turning of hardened steels
NEW WX2000	➔	High speed turning of super alloys

K Cast Iron
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

RCGX	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
RCGX 35	.250	.1875	-	-	●		

RPGX	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
RPGX 35	.250	.1875	-	-	●		
RPGX 45	.500	.3125	-	-	●		

SPG	Cutting Conditions:				Grades		
	Continuous Cut				●	●	●
	Medium Cut				●	●	●
	Interrupted Cut				●	●	●
					NS30	WX2000	NB90S
Sumitomo Catalog #	I.C.	T	r	Hole Dia.			
SPG 322	.375	.125	.0313	-	●		
SPG 422			.0313		▲		●
SPG 423	.500		.0469		▲		
SPG 432		.1875	.0313		▲		
SPG 634	.750		.0625		▲		

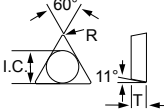
TPG	Cutting Conditions:				Grades					
	Continuous Cut									
	Medium Cut									
	Interrupted Cut									
										
Sumitomo Catalog #	I.C.	T	r	Hole Dia.						
TPG 221	.250	.125	.0156	-						
TPG 222			.0313							
TPG 321			.0156							
TPG 322	.375	.0313								
TPG 323			.0156							
TPG 332			.0313							
TPG 432	.500	.1875	.0313	-						
TPG 433			.0469							





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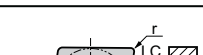
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PCD Inserts.....	173-183

CN

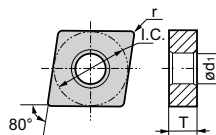
Negative

W Wiper Insert
F No Edge Preparation
T .004" - .006" x -25° w/hone
B Full Top
LS Extra Sharp
HS Extra Tough



CNMA					Coated										Uncoated				Inscribed Circle	Dimensions			
					H										K					Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)
															S								
Full Tip		CNMA431	CNMA120404																.500	.1875	.0156	.020	.2031
		CNMA432	CNMA120408																.500	.1875	.0313	.020	.2031
		CNMA433	CNMA120412																.500	.1875	.0469	.020	.2031
Multi-Mid		2MD-CNMA431	2MD-CNMA120404																.500	.1875	.0156	.020	.2031
		2MD-CNMA432	2MD-CNMA120408																.500	.1875	.0313	.020	.2031
		2MD-CNMA433	2MD-CNMA120412																.500	.1875	.0469	.020	.2031
Mini Tip		NS-CNMA431	NS-CNMA120404																.500	.1875	.0156	.015	.2031
		NS-CNMA432	NS-CNMA120408																.500	.1875	.0313	.015	.2031
		NS-CNMA433	NS-CNMA120412																.500	.1875	.0469	.015	.2031
		NU-CNMA431	NU-CNMA120404																.500	.1875	.0156	.015	.2031
		NU-CNMA432	NU-CNMA120408																.500	.1875	.0313	.015	.2031
		NU-CNMA432F	NU-CNMA120408F																.500	.1875	.0313	.015	.2031
		NU-CNMA433	NU-CNMA120412																.500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased depth of cut.

CNGA					Coated										Uncoated				H		K		Inscribed Circle	Dimensions			
					BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BN5800	S		Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)
Catalog No.	ISO Cat. No.	2NC-CNGA432	2NC-CNGA120408	•	•	•	•												.500	.1875	.0313	.015	.2031				
	2NC-CNGA432LS	2NC-CNGA120408LS	•			•	•												.500	.1875	.0313	.015	.2031				
	2NC-CNGA432HS	2NC-CNGA120408HS				•	•	•											.500	.1875	.0313	.015	.2031				
	2NC-CNGA433	2NC-CNGA120412	•			•	•												.500	.1875	.0469	.015	.2031				
	2NC-CNGA433LS	2NC-CNGA120412LS	•			•	•												.500	.1875	.0469	.015	.2031				
	2NC-CNGA433HS	2NC-CNGA120412HS				•	•	•											.500	.1875	.0469	.015	.2031				
	4NC-CNGA431	4NC-CNGA120404	▲	•	▲	•	•	•											.500	.1875	.0156	.015	.2031				
	4NC-CNGA431LS	4NC-CNGA120404LS		•		•	★												.500	.1875	.0156	.015	.2031				
	4NC-CNGA431HS	4NC-CNGA120404HS				•	•												.500	.1875	.0156	.015	.2031				
	4NC-CNGA431W	4NC-CNGA120404W	▲	•	▲	•	•	•											.500	.1875	.0156	.015	.2031				
	4NC-CNGA432	4NC-CNGA120408	▲	•	▲	•	•	•											.500	.1875	.0313	.015	.2031				
	4NC-CNGA432LS	4NC-CNGA120408LS		•		•	•	•											.500	.1875	.0313	.015	.2031				
	4NC-CNGA432HS	4NC-CNGA120408HS				•	•	•											.500	.1875	.0313	.015	.2031				
	4NC-CNGA432W	4NC-CNGA120408W	▲	•	▲	•	•	•											.500	.1875	.0313	.015	.2031				
	4NC-CNGA433	4NC-CNGA120412	▲	•	▲	•	•	•											.500	.1875	.0469	.015	.2031				
	4NC-CNGA433LS	4NC-CNGA120412LS		•		•	★												.500	.1875	.0469	.015	.2031				
	4NC-CNGA433HS	4NC-CNGA120412HS				•	•	•											.500	.1875	.0469	.015	.2031				
4NC-CNGA433W	4NC-CNGA120412W		•		•	•	•											.500	.1875	.0469	.015	.2031					
	2NU-CNGA431	2NU-CNGA120404						•	•		•	▲	•		•	▲		.500	.1875	.0156	.015	.2031					
	2NU-CNGA431F	2NU-CNGA120404F													•			.500	.1875	.0156	.015	.2031					
	2NU-CNGA431T	2NU-CNGA120404T													★			.500	.1875	.0156	.015	.2031					
	2NU-CNGA431W	2NU-CNGA120404W													•			.500	.1875	.0156	.015	.2031					
	2NU-CNGA432	2NU-CNGA120408						•			•	▲	•		•	▲		.500	.1875	.0313	.015	.2031					
	2NU-CNGA432F	2NU-CNGA120408F													•			.500	.1875	.0313	.015	.2031					
	2NU-CNGA432T	2NU-CNGA120408T													•			.500	.1875	.0313	.015	.2031					
	2NU-CNGA432W	2NU-CNGA120408W													•			.500	.1875	.0313	.015	.2031					
	2NU-CNGA433	2NU-CNGA120412						•			•	▲	•		•			.500	.1875	.0469	.015	.2031					
	2NU-CNGA433T	2NU-CNGA120412T													•			.500	.1875	.0469	.015	.2031					
	CNGA432	CNGA120408														★		.500	.1875	.0313	.150	.2031					
	CNGA433	CNGA120412														•		.500	.1875	.0469	.150	.2031					

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased depth of cut.

CN

80° Diamond Type

Negative

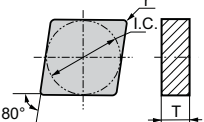
EDGE PREPARATIONS:

W Wiper Insert
F No Edge Preparation
T .004" - .006" x -25° w/hone
B Full Top
LS Extra Sharp
HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

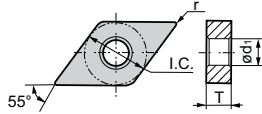
CNGX					Coated		Uncoated										Dimensions							
					H						K				S	Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)				
					Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800	
CNGX433	CNGX120412																		★	.500	.1875	.0469	.150	-
CNGX434	CNGX120416																		★	.500	.1875	.0625	.150	-

CNG					Coated		Uncoated										Dimensions									
					H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)					
					S										S											
															S											
Solid CBN		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800						
		CNG322	CNGN090308																		●	.375	.125	.0313	.150	-
		CNG322F	CNGN090308F																		★	.375	.125	.0313	.150	-
		CNG323	CNGN090312																		●	.375	.125	.0469	.150	-
		CNG323F	CNGN090312F																		★	.375	.125	.0469	.150	-
		CNG432	CNGN120408																		★	.500	.1875	.0313	.150	-
		CNG433	CNGN120412																		●	.500	.1875	.0469	.150	-
		CNG434	CNGN120416																		★	.500	.1875	.0625	.150	-

DN

55° Diamond Type

Negative

DNMA				Coated					Uncoated					K			Dimensions								
				H					S					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)							
		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800					
Full Tip		DNMA431	DNMA150404							•				•	▲		•		▲		.500	.1875	.0156	.020	.2031
		DNMA432	DNMA150408								•		•	•	▲		•	•	▲		.500	.1875	.0313	.020	.2031
		DNMA433	DNMA150412								•		•	•	▲			•		▲		.500	.1875	.0469	.020
Multi-Mid Tip		2MD-DNMA431	2MD-DNMA150404										•	▲							.500	.1875	.0156	.020	.2031
		2MD-DNMA432	2MD-DNMA150408								•		•	▲				•			.500	.1875	.0313	.020	.2031
		2MD-DNMA433	2MD-DNMA150412										•	▲				•			.500	.1875	.0469	.020	.2031
Mini Tip		NS-DNMA431	NS-DNMA150404									•									.500	.1875	.0156	.015	.2031
		NS-DNMA432	NS-DNMA150408									•									.500	.1875	.0313	.015	.2031
		NS-DNMA433	NS-DNMA150412									•									.500	.1875	.0469	.015	.2031
		NU-DNMA431	NU-DNMA150404								•	•			•	▲		•		▲	.500	.1875	.0156	.015	.2031
		NU-DNMA432	NU-DNMA150408								•	•			•	▲		•		▲	.500	.1875	.0313	.015	.2031
		NU-DNMA432F	NU-DNMA150408F																		.500	.1875	.0313	.015	.2031
		NU-DNMA433	NU-DNMA150412								•	•			•	▲		•		▲	.500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased depth of cut.



DN

55° Diamond Type

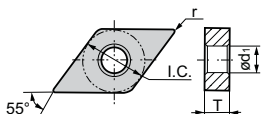
Negative

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

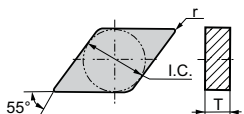
● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

DNGA

Catalog No. ISO Cat. No.

Coated			Uncoated														Dimensions					
H									K					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)				
BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500						BN700	BN600	BNS800	
	●		●	●	●													500	.1875	.0313	.015	.2031
	●				●													500	.1875	.0313	.015	.2031
	●	●		●	●													500	.1875	.0313	.015	.2031
					●	●												500	.1875	.0469	.015	.2031
		●		●	●													500	.1875	.0469	.015	.2031
		●		●	●	●												500	.1875	.0469	.015	.2031
▲	●	▲		●	★	●												500	.1875	.0156	.015	.2031
	●		●	●														500	.1875	.0156	.015	.2031
				●														500	.1875	.0156	.015	.2031
▲	●	▲		●	●	●												500	.1875	.0313	.015	.2031
	●			●	★													500	.1875	.0313	.015	.2031
				●	●													500	.1875	.0313	.015	.2031
▲	●	▲		●	●													500	.1875	.0469	.015	.2031
	●			●	★													500	.1875	.0469	.015	.2031
				●	●													500	.1875	.0469	.015	.2031
																		500	.1875	.0469	.015	.2031
															●			500	.1875	.0156	.015	.2031
											▲	●			●			500	.1875	.0156	.015	.2031
													●			★		500	.1875	.0156	.015	.2031
							●				▲	●			●			500	.1875	.0313	.015	.2031
															●			500	.1875	.0313	.015	.2031
															●			500	.1875	.0313	.015	.2031
										●					●			500	.1875	.0469	.015	.2031
											●				●			500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

DNG

Catalog No. ISO Cat. No.

Coated			Uncoated										Dimensions												
			H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)						
													S												
			BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800						
		DNG322																	★	.375	.125	.0313	.150	-	
		DNG322F																		★	.375	.125	.0313	.150	-
		DNG323																		★	.375	.125	.0469	.150	-
		DNG323F																		★	.375	.125	.0469	.150	-

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



Wiper inserts allow you to double the feed rate and maintain the same surface finish quality.



RN

Round Type

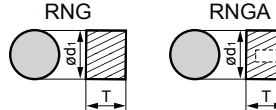
Negative

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

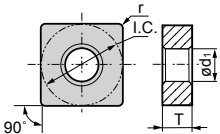
RNG RNGA				Coated		Uncoated										Dimensions											
				H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)							
				S																							
Full Top		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800	.375	.125	-	.020	-		
		RNG32B	RNGN090300B								●								●	▲		.500	.1875	-	.020	-	
		RNG43B	RNGN120400B									●			●					●	▲		.354	.250	-	.020	-
Solid CBN		RNGA094	RNGA094																								
		RNG32	RNGN090300																●	★		.375	.125	-	.150	-	
		RNG32F	RNGN090300F																	●	★		.375	.125	-	.150	-
		RNG42	RNGN120300																	●	★		.500	.125	-	.150	-
		RNG42F	RNGN120300F																	●	★		.500	.125	-	.150	-
		RNG43	RNGN120400																●			.500	.1875	-	.150	-	

Note: Holders available for RNG/RNGA inserts. Contact the Engineering Department.

SN

Square Type

Negative

SNMA					Coated		Uncoated										Dimensions											
					H					K					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia (ød1)									
																				S								
										BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800		
Full Tip		SNMA432	SNMA120408									•			•	•	▲		•	•	▲		.500	.1875	.0313	.020	.2031	
		SNMA433	SNMA120412										•			•	•	▲		•	•	▲		.500	.1875	.0469	.020	.2031
Multi-Mid Tip		2MD-SNMA431	2MD-SNMA120404												•	▲							.500	.1875	.0156	.020	.2031	
		2MD-SNMA432	2MD-SNMA120408												•	▲				•			.500	.1875	.0313	.020	.2031	
		2MD-SNMA433	2MD-SNMA120412												•	▲				•			.500	.1875	.0469	.020	.2031	
Mini Tip		NS-SNMA431	NS-SNMA120404										•										.500	.1875	.0156	.015	.2031	
		NS-SNMA432	NS-SNMA120408										•										.500	.1875	.0313	.015	.2031	
		NS-SNMA433	NS-SNMA120412										•										.500	.1875	.0469	.015	.2031	
		NU-SNMA431	NU-SNMA120404									•	•			•	▲			•		▲		.500	.1875	.0156	.015	.2031
		NU-SNMA432	NU-SNMA120408									•	•			•	▲			•		▲		.500	.1875	.0313	.015	.2031
		NU-SNMA433	NU-SNMA120412									•	•			•	▲			•		▲		.500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



Wiper style CBN should not be applied to concave or convex surfaces. For best results, use a 5° lead toolholder or boring bar.



SN

Square Type

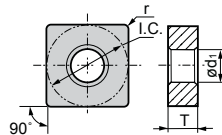
Negative

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

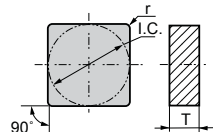
K Cast Iron
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

SNGA

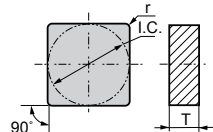
Catalog No. ISO Cat. No.

Coated		Uncoated										Dimensions										
H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)						
BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300						BN350	BN500	BN700	BN600	BNS800	
				●														.500	.1875	.0313	.015	.2031
				●														.500	.1875	.0469	.015	.2031
							★			★					●			.500	.1875	.0156	.015	.2031
							★			●					●			.500	.1875	.0313	.015	.2031
															●			.500	.1875	.0313	.015	.2031
															●			.500	.1875	.0313	.015	.2031
							★			●					●			.500	.1875	.0469	.015	.2031
															●			.500	.1875	.0469	.015	.2031
																★		.500	.1875	.0313	.150	.2031
																★		.500	.1875	.0469	.150	.2031

SNGX

Catalog No. ISO Cat. No.

Coated		Uncoated										Dimensions										
H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)						
										S												
BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800	★	.500	.1875	.0469	.150	-
																	★	.500	.1875	.0625	.150	-

SNG

Catalog No. ISO Cat. No.

Coated			Uncoated														Dimensions					
H										K				Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)				
BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500						BN700	BN600	BNS800	
							★							★				.500	.1875	.0313	.020	-
																		.500	.1875	.0313	.020	-
		SNG322															●	.375	.125	.0313	.150	-
		SNG322F															★	.375	.125	.0313	.150	-
		SNG323															●	.375	.125	.0469	.150	-
		SNG323F															★	.375	.125	.0469	.150	-
		SNG422															●	.500	.1875	.0313	.150	-
		SNG422F															★	.500	.1875	.0313	.150	-
		SNG423															●	.500	.1875	.0469	.150	-
		SNG423F															★	.500	.1875	.0469	.150	-
		SNG424															●	.500	.1875	.0625	.150	-
		SNG432															●	.500	.1875	.0313	.150	-
		SNG433															●	.500	.1875	.0469	.150	-
		SNG434															●	.500	.1875	.0625	.150	-



TN

60° Triangle Type

Negative

EDGE PREPARATIONS:

W Wiper Insert
F No Edge Preparation
T .004" - .006" x -25° w/hone
B Full Top
LS Extra Sharp
HS Extra Tough

K Cast Iron

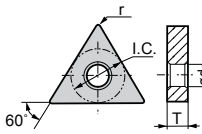
S Exotic Materials

H Hardened Steel

● USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

TNMA					Coated										Uncoated			Dimensions				
					H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)	
															S							
					BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800	
	TNMA330.5	TNMA160402						●										.375	.1875	.0078	.020	.150
	TNMA331	TNMA160404						●		●	●	▲		●	●	▲		.375	.1875	.0156	.020	.150
	TNMA332	TNMA160408						●		●	●	▲		●	●	▲		.375	.1875	.0313	.020	.150
	TNMA333	TNMA160412						●		●				●	●	▲		.375	.1875	.0469	.020	.150
	TNMA431	TNMA220404						●										.500	.1875	.0156	.020	.2031
	TNMA432	TNMA220408						●		●	●	▲		●		▲		.500	.1875	.0313	.020	.2031
	TNMA433	TNMA220412						●		●	●	▲		●		▲		.500	.1875	.0469	.020	.2031
	3MD-TNMA331	3MD-TNMA160404								●	▲							.375	.1875	.0156	.020	.150
	3MD-TNMA332	3MD-TNMA160408								●	▲			●				.375	.1875	.0313	.020	.150
	3MD-TNMA333	3MD-TNMA160412								●	▲			●				.375	.1875	.0469	.020	.150
	NS-TNMA331	NS-TNMA160404						●										.375	.1875	.0156	.015	.150
	NS-TNMA332	NS-TNMA160408						●										.375	.1875	.0313	.015	.150
	NS-TNMA333	NS-TNMA160412						●										.375	.1875	.0469	.015	.150
	NU-TNMA331	NU-TNMA160404						●	●		●	▲		●		▲		.375	.1875	.0156	.015	.150
	NU-TNMA331F	NU-TNMA160404F						●	●		●	▲		●		▲		.375	.1875	.0156	.015	.150
	NU-TNMA332	NU-TNMA160408						●	●		●	▲		●		▲		.375	.1875	.0313	.015	.150
	NU-TNMA332F	NU-TNMA160408F						●	●		●	▲		●		▲		.375	.1875	.0313	.015	.150
	NU-TNMA333	NU-TNMA1604012						●	●		●	▲		●		▲		.375	.1875	.0469	.015	.150
	NU-TNMA431	NU-TNMA220404						●	●		●	▲		●		▲		.500	.1875	.0156	.015	.2031
	NU-TNMA432	NU-TNMA220408						●	●		●	▲		●		▲		.500	.1875	.0313	.015	.2031
	NU-TNMA433	NU-TNMA220412						●	●		●	▲		●		▲		.500	.1875	.0469	.015	.2031





EDGE PREPARATIONS:

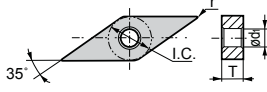
W Wiper Insert
F No Edge Preparation
T .004" - .006" x -25° w/hone
B Full Top
LS Extra Sharp
HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

● USA Stocked Item
★ Worldwide Warehouse Item
▲ USA Limited Availability Item

VNMA					Coated		Uncoated										Dimensions						
					H						K				Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)				
					S																		
					BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800		
Full Tip		Catalog No.	ISO Cat. No.															.375	.1875	.0156	.020	.150	
		VNMA331	VNMA160404						●		●	●	▲		●		▲		.375	.1875	.0313	.020	.150
		VNMA332	VNMA160408						●		●	●	▲		●	●	▲		.375	.1875	.0469	.020	.150
Multi-Mid Tip <th rowspan="3"></th> <td>VNMA333</td> <td>VNMA160412</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>.375</td> <td>.1875</td> <td>.0469</td> <td>.020</td> <td>.150</td>		VNMA333	VNMA160412															.375	.1875	.0469	.020	.150	
		2MD-VNMA331	2MD-VNMA160404																.375	.1875	.0156	.020	.150
		2MD-VNMA332	2MD-VNMA160408						●			●	▲			●			.375	.1875	.0313	.020	.150
Mini Tip <th rowspan="6"></th> <td>2MD-VNMA333</td> <td>2MD-VNMA160412</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>●</td> <td>▲</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>.375</td> <td>.1875</td> <td>.0469</td> <td>.020</td> <td>.150</td>		2MD-VNMA333	2MD-VNMA160412								●	▲						.375	.1875	.0469	.020	.150	
		NS-VNMA331	NS-VNMA160404																.375	.1875	.0156	.015	.150
		NS-VNMA332	NS-VNMA160408																.375	.1875	.0313	.015	.150
		NU-VNMA331	NU-VNMA160404						●	●			●		●		▲		.375	.1875	.0156	.015	.150
		NU-VNMA332	NU-VNMA160408						●	●			●		●		▲		.375	.1875	.0313	.015	.150
		NU-VNMA333	NU-VNMA160412						●	●			●		●		▲		.375	.1875	.0469	.015	.150

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

VNGA					Coated		Uncoated										Dimensions									
					H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)					
					BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300						BN350	BN500	BN700	BN600	BNS800
																	S									
Coated Mini Tip		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800	.375	.1875	.0313	.015	.150	
		2NC-VNGA332	2NC-VNGA160408	●			●	●														.375	.1875	.0313	.015	.150
		2NC-VNGA332LS	2NC-VNGA160408LS	●				●														.375	.1875	.0313	.015	.150
		2NC-VNGA332HS	2NC-VNGA160408HS					●	●													.375	.1875	.0313	.015	.150
		4NC-VNGA331	4NC-VNGA160404	▲	●	▲	●	●	●													.375	.1875	.0156	.015	.150
		4NC-VNGA331LS	4NC-VNGA160404LS	●			●	●														.375	.1875	.0156	.015	.150
		4NC-VNGA331HS	4NC-VNGA160404HS				●	●														.375	.1875	.0156	.015	.150
		4NC-VNGA332	4NC-VNGA160408	▲	●	▲	●	●	●													.375	.1875	.0313	.015	.150
		4NC-VNGA332LS	4NC-VNGA160408LS		●		●	●														.375	.1875	.0313	.015	.150
		4NC-VNGA332HS	4NC-VNGA160408HS				●	●														.375	.1875	.0313	.015	.150
4NC-VNGA333	4NC-VNGA160412					●														.375	.1875	.0469	.015	.150		
Multi-Mini Tip		2NS-VNGA331	2NS-VNGA160404								★										.375	.1875	.0156	.015	.150	
		2NS-VNGA332	2NS-VNGA160408									★									.375	.1875	.0313	.015	.150	
		2NU-VNGA331	2NU-VNGA160404								★			●		●		●			.375	.1875	.0156	.015	.150	
		2NU-VNGA332	2NU-VNGA160408								●			●		●		●			.375	.1875	.0313	.015	.150	
		2NU-VNGA332F	2NU-VNGA160408F															●			.375	.1875	.0313	.015	.150	
		2NU-VNGA332T	2NU-VNGA160408T															●			.375	.1875	.0313	.015	.150	

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



WN

80° Trigon Type

Negative

EDGE PREPARATIONS:

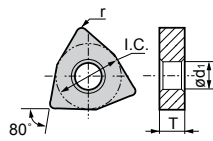
W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron**S** Exotic Materials**H** Hardened Steel

● USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

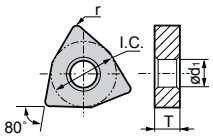
WNMA

Catalog No.

ISO Cat. No.

			Coated		Uncoated														Dimensions					
			H											K			Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)			
		BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700						BN600	BN800	
									★											.500	.1875	.0313	.020	.2031
												●					▲			.500	.1875	.0156	.015	.2031
												●					▲			.500	.1875	.0313	.015	.2031
												●						▲		.500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

WNGA

Catalog No.

ISO Cat. No.

			Coated		Uncoated															Dimensions					
			H															K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)	
			BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BN800						
Coated Mini Tip		6NC-WNGA432	●			●	●														.500	.1875	.0313	.015	.2031
		6NC-WNGA432LS					★														.500	.1875	.0313	.015	.2031
		6NC-WNGA432HS					★														.500	.1875	.0313	.015	.2031
Multi-Mini Tip		3NU-WNGA432													●		●				.500	.1875	.0313	.015	.2031
		3NU-WNGA433													●		●				.500	.1875	.0469	.015	.2031

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



CC

80° Diamond Type

7° Relief

EDGE PREPARATIONS:

W Wiper Insert
F No Edge Preparation
T .004" - .006" x -25° w/hone
B Full Top
LS Extra Sharp
HS Extra Tough

K Cast Iron

S Exotic Materials

H Hardened Steel

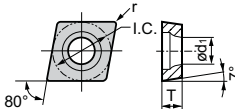
● USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

CCGA			Coated										Uncoated					Dimensions								
			H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Dia. (ød1)							
			BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300						BN350	BN500	BN700	BN600	BNS800		
	Catalog No.	ISO Cat. No.																								
Coated Mini Tip	NC-CCGA21.51	NC-CCGW060204	▲	●	▲	●	●														.250	.094	.0156	.015	.110	
	2NC-CCGA21.50.5	2NC-CCGW060202					●														.250	.094	.0078	.015	.110	
	2NC-CCGA21.51	2NC-CCGW060204					●														.250	.094	.0156	.015	.110	
	2NC-CCGA32.50.5	2NC-CCGW09T302	▲				●														.375	.156	.0078	.015	.1732	
	2NC-CCGA32.51	2NC-CCGW09T304	▲	●	▲	●	●	●													.375	.156	.0156	.015	.1732	
	2NC-CCGA32.51LS	2NC-CCGW09T304LS		●			●														.375	.156	.0156	.015	.1732	
	2NC-CCGA32.51W	2NC-CCGW09T304W	▲	▲	●	●	●	●													.375	.156	.0156	.015	.1732	
	2NC-CCGA32.52	2NC-CCGW09T308	▲	▲	▲	●	●	●													.375	.156	.0313	.015	.1732	
	2NC-CCGA32.52LS	2NC-CCGA32.52LS		●			●	●													.375	.156	.0313	.015	.1732	
Mini Tip	NU-CCGA32.50.5	NU-CCGW09T302											●					▲			.375	.156	.0078	.015	.1732	
	NU-CCGA32.51	NU-CCGW09T304											●					▲			.375	.156	.0156	.015	.1732	
Multi-Mini Tip	2NU-CCGA21.50.5	2NU-CCGW060202																●			.250	.094	.0078	.015	.110	
	2NU-CCGA21.51	2NU-CCGW060204																●			.250	.094	.0156	.015	.110	
	2NU-CCGA21.52	2NU-CCGW060208																●			.250	.094	.0313	.015	.110	
	2NU-CCGA32.51	2NU-CCGW09T304													●		●				.375	.156	.0156	.015	.1732	
	2NU-CCGA32.51W	2NU-CCGW09T304W														●	●				.375	.156	.0156	.015	.1732	
	2NU-CCGA32.52	2NU-CCGW09T308														●	●				.375	.156	.0313	.015	.1732	
	2NU-CCGA431	2NU-CCGW120404															●				.500	.1875	.0156	.015	.2165	
	2NU-CCGA432	2NU-CCGW120408															●				.500	.1875	.0313	.015	.2165	

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

CCGE					Coated		Uncoated										Dimensions								
					H										K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter				
															S										
					Catalog No.		ISO Cat. No.		BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800
Mini Tip		NU-CCGE621	NU-CCGW040104											●					▲		.1875	.125	.0156	.015	-
		NU-CCGE622	NU-CCGW040108											●					▲		.1875	.125	.0313	.015	-

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



RC

Round Type

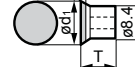
7° Relief

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

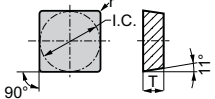
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

RCGA RCGX			RCGA 		RCGX 		Coated		Uncoated										Dimensions								
							H										K		S		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter		
			Catalog No.		ISO Cat. No.		BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BNX100	BN250	BN300								BN350	BN500
			Full Tip	RCGA	RCGX	RCGA094	RCGA0906MO											★								.354	.250
		RCGX102		RCGX102																●	▲		.250	.309	-	.040	-
		RCGX103		RCGX103																●	▲		.375	.309	-	.040	-
		RCGX104		RCGX104																●	▲		.500	.312	-	.040	-
		RCGX105		RCGX105																	▲			.625	.388	-	.040

SP

Square Type

11° Relief

SPG					Coated					Uncoated					Dimensions										
					H					K		S					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter				
					Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100						BN250	BN300	BN350	BN500
Full Tip		SPG221	SPGN060304													●	▲			.250	.125	.0156	.020	-	
		SPG321	SPGN090304									●					●	●	▲		.375	.125	.0156	.020	-
		SPG322	SPGN090308									●					●	●	▲		.375	.125	.0313	.020	-
		SPG323	SPGN090312														●	▲			.375	.125	.0469	.020	-
		SPG421	SPGN120304										●				●	▲			.500	.125	.0156	.020	-
		SPG422	SPGN120308										●				●	▲			.500	.125	.0313	.020	-
		SPG423	SPGN120312														●	▲			.500	.125	.0469	.020	-
Mini Tip		NU-SPG321	NU-SPGN090304						●			●			●	▲				.375	.125	.0156	.015	-	
		NU-SPG322	NU-SPGN090308							●		●				●	▲				.375	.125	.0313	.015	-

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

SPGA		SPGA		Coated										Uncoated					Dimensions					
				H					K					S					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter	
Full Tip	SPGA	Full Tip	Catalog No.	ISO Cat. No.		BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BNX100	BN250	BN300	BN350	BN500	BN700	BN600	BN800		
			SPGA321	SPGW090304																			.375	.125
			SPGA322	SPGW090308																			.375	.125
			SPGA323	SPGW090312																			.375	.125

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



TB

60° Triangle Type

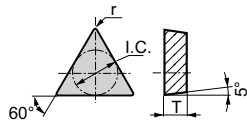
5° Relief

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TBGE

Catalog No.

ISO Cat. No.

		Coated		Uncoated														Dimensions					
		H														K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter	
																S							
		BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600	BNS800					
									●			●			●		▲		.156	.0625	.0078	.020	-
								★	★						●	●	▲		.156	.0625	.0078	.020	-
									★	★		●			●	●	▲		.156	.0625	.0156	.020	-
									★	★			●		●	●	▲		.156	.0625	.0156	.020	-
									★	★					●	●	▲		.156	.0625	.0313	.020	-
									★	★					●		▲		.156	.0625	.0313	.020	-

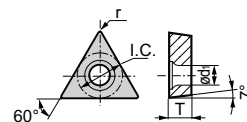
Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

BSN = Light edge preparation

TC

60° Triangle Type

7° Relief

TCGA

Catalog No.

ISO Cat. No.

Coated			Uncoated														Dimensions					
H														K		Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter		
BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500	BN700	BN600						BNS800	
															●			.250	.094	.0156	.015	.110
															●			.250	.094	.0313	.015	.110
▲	●	▲	●	●														.250	.094	.0156	.015	.110
▲	●	▲	●	●														.250	.094	.0313	.015	.110

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



VB

35° Diamond Type

5° Relief

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

K Cast Iron
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

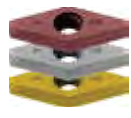
VBGA			Coated										Uncoated					Dimensions				
			H										K					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter
		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500					
Coated Mini Tip		2NC-VBGA221	2NC-VBGW110304	▲	●	▲	●	●										.250	.125	.0156	.015	.134
		2NC-VBGA221LS	2NC-VBGW110304LS		●													.250	.125	.0156	.015	.134
		2NC-VBGA222	2NC-VBGW110308	▲		▲		●										.250	.125	.0313	.015	.134
		2NC-VBGA331	2NC-VBGW160404					●										.375	.1875	.0156	.015	.1732
		2NC-VBGA332	2NC-VBGW160408					●										.375	.1875	.0313	.015	.1732
Multi-Mini Tip		2NU-VBGA221	2NU-VBGW110304														●	.250	.125	.0156	.015	.134
		2NU-VBGA222	2NU-VBGW110308														●	.250	.125	.0313	.015	.134

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

VC

35° Diamond Type

7° Relief

VCGA			Coated										Uncoated					Dimensions				
			H										K					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter
		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500					
Coated Mini Tip		2NC-VCGA331	2NC-VCGW160404	●	●		●	●										.375	.1875	.0156	.015	.1732
		2NC-VCGA331LS	2NC-VCGW160404LS	★				★										.375	.1875	.0156	.015	.1732
		2NC-VCGA331HS	2NC-VCGW160404HS					★										.375	.1875	.0156	.015	.1732
		2NC-VCGA332	2NC-VCGW160408	●		●	●	●										.375	.1875	.0313	.015	.1732
		2NC-VCGA332LS	2NC-VCGW160408LS	★			★	★										.375	.1875	.0313	.015	.1732
		2NC-VCGA332HS	2NC-VCGW160408HS				★	★										.375	.1875	.0313	.015	.1732
Mini Tip		NU-VCGA220.5	NU-VCGW110302											●				.250	.125	.0078	.015	.134
		NU-VCGA221	NU-VCGW110304										★					.250	.125	.0156	.015	.134

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

VCMA			Coated										Uncoated					Dimensions				
			H										K					Inscribed Circle	Thickness	Nose Radius	Max. D. O. C.	Hole Diameter
		Catalog No.	ISO Cat. No.	BNC80	BNC100	BNC150	BNC160	BNC200	BNC300	BNX10	BNX20	BNX25	BN100	BN250	BN300	BN350	BN500					
Full Tip		VCMA331	VCMW160404							★								.375	.1875	.0156	.020	.1732
		VCMA332	VCMW160408							★							★	.375	.1875	.0313	.020	.1732

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.



ZN

80° Special Shape

7° Relief

EDGE PREPARATIONS:

W Wiper Insert
 F No Edge Preparation
 T .004" - .006" x -25° w/hone
 B Full Top
 LS Extra Sharp
 HS Extra Tough

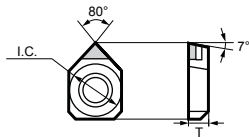
K Cast Iron**S** Exotic Materials**H** Hardened Steel

● USA Stocked Item

★ Worldwide Warehouse Item

▲ USA Limited Availability Item

ZNEX



Catalog No.

ISO Cat. No.

Coated

Uncoated

Dimensions

H

K

S

Inscribed Circle

Thickness

Nose Radius

Max. D. O. C.

Hole Diameter

Full Tip



NC-ZNEX620.5

NC-ZNEX040102

NC-ZNEX621

NC-ZNEX040104

NU-ZNEX620.5

NU-ZNEX040102

NU-ZNEX621

NU-ZNEX040104

BNC80

BNC100

BNC150

BNC160

BNC200

BNC300

BNX10

BNX20

BNX25

BN100

BN250

BN300

BN350

BN500

BN700

BN600

BNS800

.1875

.0625

.0078

.015

.090

.1875

.0625

.0156

.015

.090

.1875

.0625

.0078

.015

.090

.1875

.0625

.0156

.015

.090

Note: Maximum depth of cut is based on hardened steel applications. Other materials may allow for increased maximum depths of cut.

Grooving
&
Threading

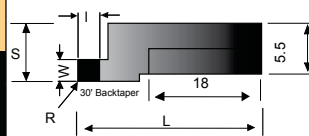
CBN Inserts for:

• BNGG (p. 251)

GROOVING INSERTS

For BNGG Holder

BNGNT



Catalog No.

Coated

Uncoated

Dimensions (mm)

H

K

S

W

I

R

L

S

Full Tip



BNGNT0200L

BNGNT0200R

BNGNT0250L

BNGNT0250R

BNGNT0300L

BNGNT0300R

BNGNT0400L

BNGNT0400R

BNGNT0500L

BNGNT0500R

BNGNT0600L

BNGNT0600R

BNC80

BNC100

BNC150

BNC160

BNC200

BNC300

BNX10

BNX20

BNX25

BN100

BN250

BN300

BN350

BN500

BN700

BN600

BNS800

2.0

4.0

0.2

25.0

6.0

2.5

4.0

0.2

25.0

6.0

3.0

5.0

0.4

25.0

6.0

4.0

6.0

0.4

26.0

6.0

5.0

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0.4

26.0

6.0

6.0

7.0

0.4

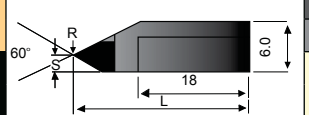
27.0

6.0

THREADING INSERTS

For BNGG Holder

BNTT



Catalog No.

Coated

Uncoated

Dimensions (mm)

H

K

S

Pitch

R

L

S

Full Tip



BNTT1020R

BNTT1530R

BNC80

BNC100

BNC150

BNC160

BNC200

BNC300

BNX10

BNX20

BNX25

BN100

BN250

BN300

BN350

BN500

BN700

BN600

BNS800

1.0 ~ 2.0

.13

25.0

2.0

1.5 ~ 3.0

.20

25.0

2.0



Grooving

CBN Inserts for:

- GWB Type (p. 250)
- SS-Type (p. 242)
- A-SE Type (p. 242)

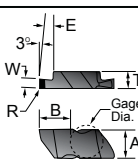
K Cast Iron
S Exotic Materials
H Hardened Steel

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

GWB GROOVING INSERTS

For GWB Type Holder		Coated		Uncoated		Dimensions				
NEW CGA		H		W ±.001 in ±.025 (mm)	a _r in (mm)	r in (mm)	ød in (mm)	s in (mm)		
		BNC30G	BN250							
Catalog No.		Availability								
Full Tip	BN250 	CGAR 4062	●	●	.062 (1.575)	.1378 (3.5)	.0078 (.2)	.625 (15.875)	.1875 (4.76)	
		CGAL 4062	●	●	.094 (2.388)	.1575 (4.0)				
		CGAR 4094	●	●	.125 (3.175)	.1969 (5.0)				
		CGAL 4094	●	●	.189 (4.801)	.2362 (6.0)				
		CGAR 4125	●	●	.0591 (1.5)	.1378 (3.5)				
		CGAL 4125	●	●	.0787 (2.0)	.1575 (4.0)				
	BNC30G 	CGAR 6189	●	●	.0984 (2.5)	.1969 (5.0)	.0078 (.2)	.625 (15.875)	.1875 (4.76)	
		CGAL 6189	●	●	.1772 (4.5)	.2362 (6.0)				
		CGAR 1504150	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504150	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504200	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504200	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504250	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504250	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504300	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504300	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504350	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504350	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504400	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504400	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1504450	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1504450	●	●	.2165 (5.5)	.2362 (6.0)				
		CGAR 1506500	●	●	.1575 (4.0)	.1969 (5.0)				
		CGAL 1506500	●	●	.2165 (5.5)	.2362 (6.0)				
	CGAR 1506550	●	●	.1575 (4.0)	.1969 (5.0)					
	CGAL 1506550	●	●	.2165 (5.5)	.2362 (6.0)					
	CGAR 1506600	●	●	.1575 (4.0)	.1969 (5.0)					
	CGAL 1506600	●	●	.2165 (5.5)	.2362 (6.0)					

SumiNOTCH GROOVING INSERTS

For SS & A-SE Type Holders			Coated		Uncoated										Dimensions (in)										
			H					K					S		W ±.001	R	E ±.001	T	A	B	Gage Dia.				
BNC80	BNC100		BNC150	BNC160	BNC200	BNC300	BNC10	BNC20	BNC25	BN100	BN250	BN300	BN350	BN500								BN700	BN600	BNS800	
Catalog No.																									
Full Tip		SG-3047R										●	●												
	SG-3062L											●	●												
	SG-3062R											●	●												
	SG-3094L											●	●												
	SG-3094R											●	●												
	SG-3125L											●	●												
	SG-3125R											●	●												
	SG-3189R												●	●											



CN

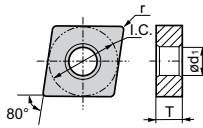
80° Diamond Type

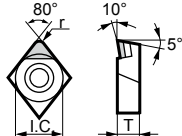
Negative

EDGE PREPARATIONS:

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like" Finish

- USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

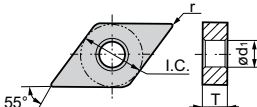
CNMA					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
Standard Tip	Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200								
		CNMA432	CNMA120408					●	.500	.1875	.0313	.2031	S	0°	
	CNMA432H	CNMA120408H					●	.500	.1875	.0313	.2031	H	0°		
NF Tip	Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200								
		NF-CNMA432	NF-CNMA120408				●	●	.500	.1875	.0313	.2031	S	0°	
	NF-CNMA432H	NF-CNMA120408H					●	●	.500	.1875	.0313	.2031	H	0°	

CNMX					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
					DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.												
		CNMX431	CNMX120404		●			●	.500	.1875	.0156	.2031	S	10°	
		CNMX432	CNMX120408		●			●	.500	.1875	.0313	.2031	S	10°	
		CNMX433	CNMX120412		●			●	.500	.1875	.0469	.2031	S	10°	
NF Tip		NF-CNMX431	NF-CNMX120404				●	●	.500	.1875	.0156	.2031	S	10°	
		NF-CNMX432	NF-CNMX120408				●	●	.500	.1875	.0313	.2031	S	10°	
		NF-CNMX433	NF-CNMX120412				★	★	.500	.1875	.0469	.2031	S	10°	

DN

55° Diamond Type

Negative

DNMA					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
					DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.												
		DNMA432	DNMA150408						•	.500	.1875	.0313	.2031	S	0°
		DNMA432H	DNMA150408H						•	.500	.1875	.0313	.2031	H	0°
NF Tip		NF-DNMA432	NF-DNMA150408					•	•	.500	.1875	.0313	.2031	S	0°
		NF-DNMA432H	NF-DNMA150408H					•	•	.500	.1875	.0313	.2031	H	0°



DN

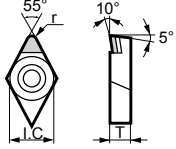
55° Diamond Type

Negative

EDGE PREPARATIONS:

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like" Finish

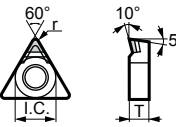
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

DNMX				Stock					Dimensions					
				N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		DNMX431	DNMX150404	●	●	●	●	●	.500	.1875	.0156	.2031	S	10°
		DNMX432	DNMX150408	●	●	●	●	●	.500	.1875	.0313	.2031	S	10°
		DNMX433	DNMX150412	●	●	●	●	●	.500	.1875	.0469	.2031	S	10°
NF Tip		NF-DNMX430.5	NF-DNMX150402				●	●	.500	.1875	.0078	.2031	S	10°
		NF-DNMX431	NF-DNMX150404				●	●	.500	.1875	.0156	.2031	S	10°
		NF-DNMX432	NF-DNMX150408				●	●	.500	.1875	.0313	.2031	S	10°
		NF-DNMX433	NF-DNMX150412				★	★	.500	.1875	.0469	.2031	S	10°

TN

60° Triangle Type

Negative

TNMX				Stock					Dimensions					
				N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		TNMX331	TNMX160404					★	.375	.1875	.0156	.150	S	10°
		TNMX332	TNMX160408					★	.375	.1875	.0313	.150	S	10°
NF Tip		NF-TNMX330.5	NF-TNMX160402				★	★	.375	.1875	.0078	.150	S	10°
		NF-TNMX331	NF-TNMX160404				●	●	.375	.1875	.0156	.150	S	10°
		NF-TNMX332	NF-TNMX160408				●	●	.375	.1875	.0313	.150	S	10°

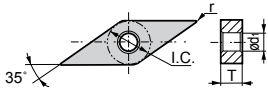


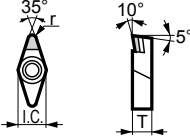


EDGE PREPARATIONS:

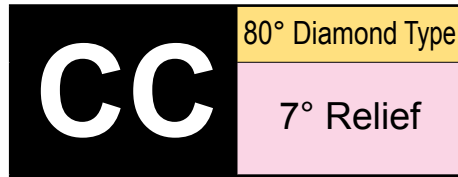
S Standard
H Honed
K Reinforced
AW Chipbreaker Stud
WF High Luster "Mirror-Like" Finish

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

VNMA					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
					DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200	Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle	
		VNMA333	VNMA160412	●				●	.375	.1875	.0469	.150	S	0°	
		VNMA333H	VNMA160412H	●				●	.375	.1875	.0469	.150	H	0°	
NF Tip			NF-VNMA332	NF-VNMA160408				●	●	.375	.1875	.0313	.150	S	0°
		NF-VNMA333	NF-VNMA160412					●	●	.375	.1875	.0469	.150	S	0°
	NF-VNMA333H	NF-VNMA160412H					●	●	.375	.1875	.0469	.150	H	0°	

VNMX					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
					DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.		●			●	.375	.1875	.0156	.150	S	10°	
		VNMX332	VNMX160408		●			●	.375	.1875	.0313	.150	S	10°	
		VNMX333	VNMX160412		●			●	.375	.1875	.0469	.150	S	10°	
NF Tip		NF-VNMX330.5	NF-VNMX160402				●	●	.375	.1875	.0078	.150	S	10°	
		NF-VNMX331	NF-VNMX160404				●	●	.375	.1875	.0156	.150	S	10°	
		NF-VNMX332	NF-VNMX160408				●	●	.375	.1875	.0313	.150	S	10°	
		NF-VNMX333	NF-VNMX160412				★	●	.375	.1875	.0469	.150	S	10°	



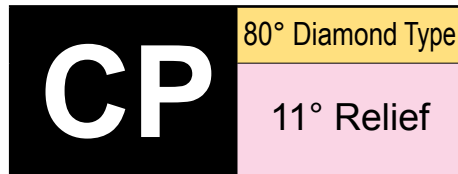


EDGE PREPARATIONS:

S Standard
H Honed
K Reinforced
AW Chipbreaker Stud
WF High Luster "Mirror-Like" Finish

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

CCMX				Stock					Dimensions					
									Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200						
NF Tip		NF-CCMX21.50	NF-CCMT060201				●	●	.250	.094	.0039	.110	S	10°
		NF-CCMX21.50.5	NF-CCMT060202				●	●	.250	.094	.0078	.110	S	10°
		NF-CCMX21.51	NF-CCMT060204				●	●	.250	.094	.0156	.110	S	10°
		NF-CCMX32.50.5	NF-CCMT09T302				●	●	.375	.156	.0078	.1732	S	10°
		NF-CCMX32.51	NF-CCMT09T304				●	●	.375	.156	.0156	.1732	S	10°
		NF-CCMX32.52	NF-CCMT09T308				●	●	.375	.156	.0313	.1732	S	10°



CPMX				Stock					Dimensions					
									Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		CPMX2.51.50.5	CPMT080202				●	●	.3125	.094	.0078	.134	S	10°
		CPMX2.51.51	CPMT080204				●	●	.3125	.094	.0156	.134	S	10°
		CPMX2.51.52	CPMT080208				●	●	.3125	.094	.0313	.134	S	10°
		CPMX320.5	CPMT090302				●	●	.375	.125	.0078	.1732	S	10°
		CPMX321	CPMT090304				●	●	.375	.125	.0156	.1732	S	10°
		CPMX322	CPMT090308				●	●	.375	.125	.0313	.1732	S	10°
NF Tip		NF-CPMX21.51	NF-CMPT060204				●	●	.250	.094	.0156	.110	S	10°
		NF-CPMX21.52	NF-CMPT060208				●	●	.250	.094	.0313	.110	S	10°
		NF-CPMX32.51	NF-CMPT09T304				●	●	.375	.156	.0156	.1732	S	10°
		NF-CPMX32.52	NF-CMPT09T308				●	●	.375	.156	.0313	.1732	S	10°
		NF-CPMX320.5	NF-CMPT090302				●	●	.375	.125	.0078	.1732	S	10°
		NF-CPMX321	NF-CMPT090304				●	●	.375	.125	.0156	.1732	S	10°
		NF-CPMX322	NF-CMPT090308				●	●	.375	.125	.0313	.1732	S	10°

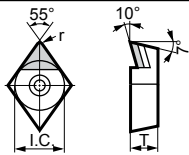
CPG				Stock					Dimensions					
									Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		CPG422	CPGN120308					●	.500	.125	.0313	-	S	0°



DC**55° Diamond Type****7° Relief****EDGE PREPARATIONS:**

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like" Finish

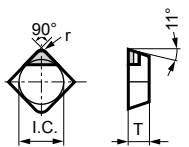
● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

DCMX

Catalog No.

ISO Cat. No.

			Stock					Dimensions					
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
Standard Tip		DCMX21.50	DCMT070201				●	.250	.094	.0039	.110	S	10°
		DCMX21.50.5	DCMT070202				●	.250	.094	.0078	.110	S	10°
		DCMX21.51	DCMT070204				●	.250	.094	.0156	.110	S	10°
		DCMX32.50	DCMT11T301				●	.375	.156	.0039	.1732	S	10°
		DCMX32.50.5	DCMT11T302				●	.375	.156	.0078	.1732	S	10°
		DCMX32.51	DCMT11T304				●	.375	.156	.0156	.1732	S	10°
NF Tip		NF-DCMX21.50	NF-DCMT070201				★	.250	.094	.0039	.110	S	10°
		NF-DCMX21.50.5	NF-DCMT070202				●	.250	.094	.0078	.110	S	10°
		NF-DCMX21.51	NF-DCMT070204				●	.250	.094	.0156	.110	S	10°
		NF-DCMX32.50	NF-DCMT11T301				★	.375	.156	.0039	.1732	S	10°
		NF-DCMX32.50.5	NF-DCMT11T302				●	.375	.156	.0078	.1732	S	10°
		NF-DCMX32.51	NF-DCMT11T304				●	.375	.156	.0156	.1732	S	10°
		NF-DCMX32.52	NF-DCMT11T308				●	.375	.156	.0313	.1732	S	10°

SP**Square Type****11° Relief****SPG**

Catalog No.

ISO Cat. No.

				Stock					Dimensions					
				N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
Standard Tip		SPG321	SPGN090304		●	●			.375	.125	.0156	-	S	0°
		SPG322	SPGN090308		●	●			.375	.125	.0313	-	S	0°
		SPG421	SPGN120304		●	●	●		.500	.125	.0156	-	S	0°
		SPG422	SPGN120308		●	●	●		.500	.125	.0313	-	S	0°
NF Tip		NF-SPG321	NF-SPGN090304				★	●	.375	.125	.0156	-	S	0°
		NF-SPG322	NF-SPGN090308				★	★	.375	.125	.0313	-	S	0°
		NF-SPG421	NF-SPGN120304				★	●	.500	.125	.0156	-	S	0°
		NF-SPG422	NF-SPGN120308				★	●	.500	.125	.0313	-	S	0°



TB

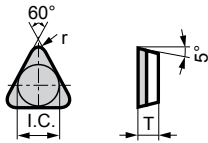
60° Triangle Type

5° Relief

EDGE PREPARATIONS:

S Standard
H Honed
K Reinforced
AW Chipbreaker Stud
WF High Luster "Mirror-Like" Finish

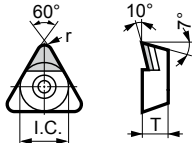
- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TBGE				Stock					Dimensions					
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200	Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
Standard Tip		TBGE520.5B	TBGE060102BSN		●			●	.156	.125	.0078	-	S	0°
		TBGE521B	TBGE060104BSN		●			●	.156	.125	.0156	-	S	0°
		TBGE522B	TBGE060108BSN					●	.156	.125	.0313	-	S	0°
		NF-TBGE520.5	NF-TBGN060102				★	●	.156	.0625	.0078	-	S	0°
NF Tip		NF-TBGE521	NF-TBGN060104				★	★	.156	.0625	.0156	-	S	0°

TC

60° Triangle Type

7° Relief

TCMX				Stock					Dimensions					
		Catalog No.	ISO Cat. No.	DA90	DA150	DA200	DA1000	DA2200	Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
Standard Tip		TCMX1.81.50	TCMT090201					●	.219	.094	.0039	.110	S	10°
		TCMX1.81.50.5	TCMT090202					●	.219	.094	.0078	.110	S	10°
		TCMX1.81.51	TCMT090204					●	.219	.094	.0156	.110	S	10°
		TCMX21.50	TCMT110201					●	.250	.094	.0039	.110	S	10°
		TCMX21.50.5	TCMT110202					●	.250	.094	.0078	.110	S	10°
		TCMX21.51	TCMT110204					●	.250	.094	.0156	.110	S	10°
NF Tip		NF-TCMX1.81.50.5	NF-TCMT090202				★	●	.219	.094	.0078	.098	S	10°
		NF-TCMX1.81.51	NF-TCMT090204				●	●	.219	.094	.0156	.098	S	10°
		NF-TCMX21.50	NF-TCMT110201				★	●	.250	.094	.0039	.110	S	10°
		NF-TCMX21.50.5	NF-TCMT110202				●	●	.250	.094	.0078	.110	S	10°
		NF-TCMX21.51	NF-TCMT110204				●	●	.250	.094	.0156	.110	S	10°



TE

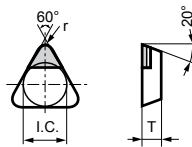
60° Triangle Type

20° Relief

EDGE PREPARATIONS:

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like" Finish

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

TEGN

Catalog No.

ISO Cat. No.

Stock					Dimensions					
N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
DA90	DA150	DA200	DA1000	DA2200						
				★	.375	.125	.0156	-	S	0°

Standard Tip

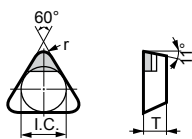
TEGN321

TEGN160304

TP

60° Triangle Type

11° Relief

TPG

Catalog No.

ISO Cat. No.

Stock					Dimensions					
N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
DA90	DA150	DA200	DA1000	DA2200						
					.250	.125	.0156	-	S	0°
					.250	.125	.0313	-	S	0°
					.375	.125	.0156	-	S	0°
					.375	.125	.0313	-	S	0°
					.375	.125	.0469	-	S	0°
					.500	.1875	.0156	-	S	0°
					.500	.1875	.0313	-	S	0°
					.219	.094	.0078	-	S	0°
					.219	.094	.0156	-	S	0°
					.250	.125	.0078	-	S	0°
					.250	.125	.0156	-	S	0°
					.250	.125	.0313	-	S	0°
					.375	.125	.0078	-	S	0°
					.375	.125	.0156	-	S	0°
					.375	.125	.0313	-	S	0°

Standard Tip

TPG221

TPGN110304

TPG222

TPGN110308

TPG321

TPGN160304

TPG322

TPGN160308

TPG323

TPGN160312

TPG431

TPGN220404

TPG432

TPGN220408

NF-TPG1.81.50.5

NF-TPGN090202

NF-TPG1.81.51

NF-TPGN090204

NF-TPG220.5

NF-TPGN110302

NF-TPG221

NF-TPGN110304

NF-TPG222

NF-TPGN110308

NF-TPG320.5

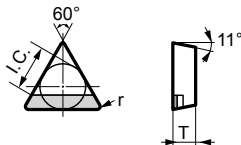
NF-TPGN160302

NF-TPG321

NF-TPGN160304

NF-TPG322

NF-TPGN160308

TPG-P

Catalog No.

ISO Cat. No.

Stock					Dimensions					
N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
DA90	DA150	DA200	DA1000	DA2200						
			★	★	.250	.125	.0156	-	S	0°
			★	★	.250	.125	.0313	-	S	0°
			★	★	.375	.125	.0156	-	S	0°

NF Tip

NF-TPG221P

NF-TPGN110304P

NF-TPG222P

NF-TPGN110308P

NF-TPG321P

NF-TPGN160304P



TP

60° Triangle Type

11° Relief

EDGE PREPARATIONS:

S Standard
H Honed
K Reinforced
AW Chipbreaker Stud
WF High Luster "Mirror-Like" Finish

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

TPGA TPGD			Stock					Dimensions					
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
			DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.										
		TPGA220	TPGW110301				●	.250	.125	.0039	.130	S	0°
		TPGA220.5	TPGW110302		●		●	.250	.125	.0078	.130	S	0°
		TPGA221	TPGW110304		●	●	●	.250	.125	.0156	.130	S	0°
		TPGA222	TPGW110308		●	●	●	.250	.125	.0313	.130	S	0°
		TPGA331	TPGW160404		●	●		.375	.1875	.0156	.1693	S	0°
		TPGA332	TPGW160408		●	●	●	.375	.1875	.0313	.1693	S	0°
NF Tip		TPGA333	TPGW160412				●	.375	.1875	.0469	.1693	S	0°
		NF-TPGD630	NF-TPGW080201				★	.1875	.094	.0039	.090	S	0°
		NF-TPGD630.5	NF-TPGW080202				●	.1875	.094	.0078	.090	S	0°
		NF-TPGD631	NF-TPGW080204				●	.1875	.094	.0156	.090	S	0°
		NF-TPGA1.81.50.5	NF-TPGW090202				●	.219	.094	.0078	.102	S	0°
		NF-TPGA1.81.51	NF-TPGW090204				●	.219	.094	.0156	.102	S	0°
		NF-TPGA21.50	NF-TPGW110201				★	.250	.094	.0039	.107	S	0°
		NF-TPGA21.50.5	NF-TPGW110202				●	.250	.094	.0078	.107	S	0°
		NF-TPGA21.51	NF-TPGW110204				●	.250	.094	.0156	.107	S	0°
		NF-TPGA220.5	NF-TPGW110302				★	.250	.125	.0078	.130	S	0°
		NF-TPGA221	NF-TPGW110304				●	.250	.125	.0156	.130	S	0°
		NF-TPGA222	NF-TPGW110308				●	.250	.125	.0313	.130	S	0°
		NF-TPGA320.5	NF-TPGW160302				●	.375	.125	.0078	.1693	S	0°
		NF-TPGA321	NF-TPGW160304				●	.375	.125	.0156	.1693	S	0°
		NF-TPGA322	NF-TPGW160308				●	.375	.125	.0313	.1693	S	0°
		NF-TPGA330	NF-TPGW160401				★	.375	.1875	.0039	.1693	S	0°
		NF-TPGA330.5	NF-TPGW160402				●	.375	.1875	.0078	.1693	S	0°
		NF-TPGA331	NF-TPGW160404				●	.375	.1875	.0156	.1693	S	0°
		NF-TPGA332	NF-TPGW160408				●	.375	.1875	.0313	.1693	S	0°
		NF-TPGA631	NF-TPGW080204				●	.1875	.094	.0156	.090	S	0°

TPMX			Stock					Dimensions					
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
			DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.										
		TPMX22V	TPMT110300				●	.250	.125	.0020	.130	S	0°
		TPMX220.5	TPMT110302				●	.250	.125	.0078	.130	S	0°
		TPMX221	TPMT110304				●	.250	.125	.0156	.130	S	0°
NF Tip		TPMX222	TPMT110308				●	.250	.125	.0313	.130	S	0°
		NF-TPMX220	NF-TPMT110301				★	.250	.125	.0039	.130	S	0°
		NF-TPMX220.5	NF-TPMT110302				★	.250	.125	.0078	.130	S	0°
		NF-TPMX221	NF-TPMT110304				★	.250	.125	.0156	.130	S	0°
		NF-TPMX222	NF-TPMT110308				★	.250	.125	.0313	.130	S	0°



VC

35° Diamond Type

7° Relief

EDGE PREPARATIONS:

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like" Finish

● USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

VCMA			Stock					Dimensions				
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation
			DA90	DA150	DA200	DA1000	DA2200					
Standard Tip		Catalog No.	ISO Cat. No.									
		VCMA333	VCMW160412					●	.375	.1875	.0469	S
		VCMA333WF	VCMW160412WF					●	.375	.1875	.0469	WF
NF Tip		VCMA220520	VCMW220520					●	.500	.219	.3125	S
		NF-VCMA332	NF-VCMW160408					●	.375	.1875	.0313	S
		NF-VCMA333	NF-VCMW160412					●	.375	.1875	.0469	S
		NF-VCMA333H	NF-VCMW160412H					●	.375	.1875	.0469	H

VCMX			Stock					Dimensions				
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation
			DA90	DA150	DA200	DA1000	DA2200					
Standard		Catalog No.	ISO Cat. No.									
		VCMX333	VCMT160412					●	.375	.1875	.0469	S
NF Tip		VCMX333WF	VCMT160412WF					●	.375	.1875	.0469	WF
		NF-VCMX220	NF-VCMT110301					●	.250	.125	.0039	S
		NF-VCMX220.5	NF-VCMT110302					●	.250	.125	.0078	S
		NF-VCMX221	NF-VCMT110304					●	.250	.125	.0156	S
		NF-VCMX331	NF-VCMT160404					●	.375	.1875	.0156	S
		NF-VCMX332	NF-VCMT160408					●	.375	.1875	.0313	S
		NF-VCMX333	NF-VCMT160412					★	.375	.1875	.0469	S

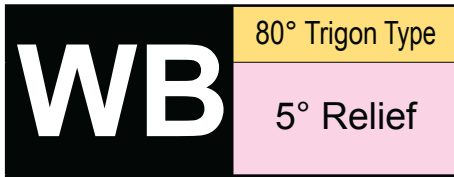
VP

35° Diamond Type

11° Relief

VPMA			Stock					Dimensions				
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation
			DA90	DA150	DA200	DA1000	DA2200					
Standard Tip		Catalog No.	ISO Cat. No.									
		VPMA443	VPMW220612					●	.500	.250	.0469	S
		VPMA443WF	VPMW220612WF					●	.500	.250	.0469	WF

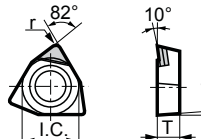




EDGE PREPARATIONS:

S Standard
H Honed
K Reinforced
AW Chipbreaker Stud
WF High Luster "Mirror-Like" Finish

- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

WBMX					Stock					Dimensions					
					N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation	Rake Angle
					DA90	DA150	DA200	DA1000	DA2200						
Standard Tip		Catalog No.	ISO Cat. No.												
		WBMX520L	WBMT060101L					●	.156	.0625	.0039	.090	S	10°	
		WBMX520.5L	WBMT060102L					●	.156	.0625	.0078	.090	S	10°	
		WBMX521L	WBMT060104L					●	.156	.0625	.0156	.090	S	10°	

MDE

Dog Bone Type

for GDE Style
Toolholders

EDGE PREPARATIONS:

S Standard
 H Honed
 K Reinforced
 AW Chipbreaker Stud
 WF High Luster "Mirror-Like"
 Finish

- USA Stocked Item
 ★ Worldwide Warehouse Item
 ▲ USA Limited Availability Item

MDE			Stock					Dimensions				
			N					Inscribed Circle	Thickness	Nose Radius	Hole Diameter	Edge Preparation
Standard Tip			DA90	DA150	DA200	DA1000	DA2200					
	Catalog No.	ISO Cat. No.										
	MDE3RN7	-					●	-	.335	.118	-	H
	MDE3RN7AW	-					●	-	.335	.118	-	AW
	MDE3RN7WF	-					●	-	.335	.118	-	WF
	MDE3RN7AWWF	-					●	-	.335	.118	-	AW/WF
	MDE4RN7	-					●	-	.335	.157	-	H
	MDE4RN7AW	-					●	-	.335	.157	-	AW
	MDE4RN7WF	-					●	-	.335	.157	-	WF
	MDE4RN7AWWF	-					●	-	.335	.157	-	AW/WF

Note: MDE inserts are held at a +7° rake angle by the GDER toolholder





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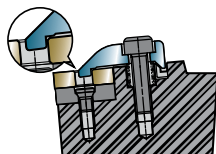
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M

Insert Holding

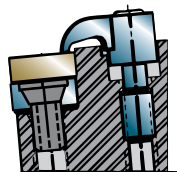
D

Clamp Mechanism



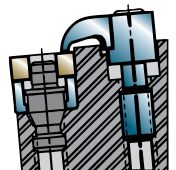
C

Clamp



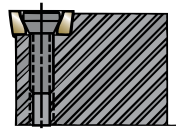
M

Clamp and Lock Pin



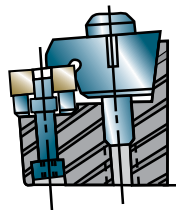
S

Screw Only



W

Wedge Clamp*



W

Insert Shape

C

Diamond



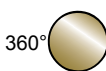
D

Diamond



R

Round



S

Square



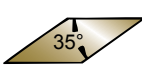
T

Triangle



V

Diamond



W

Trigon

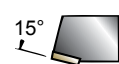


L

Toolholder Style



0° side cutting straight shank



15° side cutting straight shank



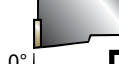
0° end cutting straight shank



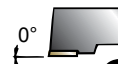
45° side cutting straight shank



30° side cutting straight shank



0° end cutting offset shank



0° side cutting offset shank



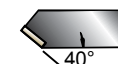
-3° side cutting offset shank



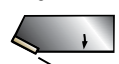
15° end cutting offset shank



5° side & end cutting offset shank



40° side cutting straight shank



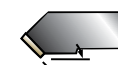
27°30' side cutting straight shank



17°30' end cutting straight shank



15° side cutting offset shank



45° side cutting offset shank



-3° end cutting offset shank



17°30' side cutting straight shank



All lead angles are $\pm 1^\circ$

N

Insert Relief Angle

B



C



N



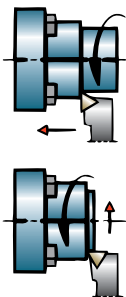
P



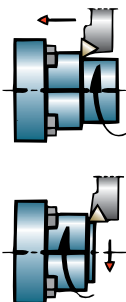
*Sumitomo Standard Only

R**Hand****R**

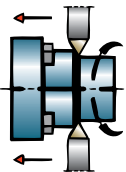
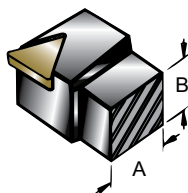
Right Hand

**L**

Left Hand

**N**

Neutral Hand

**16****Shank Size****Square Shanks**

This indicates the A & B dimensions in sixteenths (1/16).

examples:

$$12 = 12/16 = 3/4 \text{ sq.}$$

$$16 = 16/16 = 1.0 \text{ sq.}$$

$$20 = 20/16 = 1-1/4 \text{ sq.}$$

Rectangle Shanks

The first digit indicates the "A" dimension in eighths (1/8).

The second digit indicates the "B" dimension in quarters (1/4).

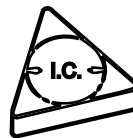
examples:

$$86 = A \times B$$

$$1.0 \times 1-1/2$$

$$85 = A \times B$$

$$1.0 \times 1-1/4$$

4**Insert Size**

For equal sided inserts this indicates the inscribed circle (I.C.) in eighths (1/8)

examples,

$$6 = 6/8 = 3/4" \text{ I.C.}$$

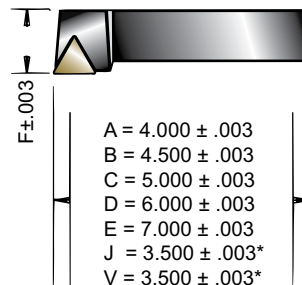
$$4 = 4/8 = 1/2" \text{ I.C.}$$

$$2.5 = 2.5/8 = 5/16 \text{ I.C.}$$

For rectangles and parallelograms two digits are necessary.

1st digit = number of eighths (1/8) in width.

2nd digit = number of quarters (1/4) in length.

D**Qualifications**

$$A = 4.000 \pm .003$$

$$B = 4.500 \pm .003$$

$$C = 5.000 \pm .003$$

$$D = 6.000 \pm .003$$

$$E = 7.000 \pm .003$$

$$J = 3.500 \pm .003^*$$

$$V = 3.500 \pm .003^*$$

*Sumitomo standard only

**Master Gage Insert
Nose Radius Chart
for Qualified Holders**

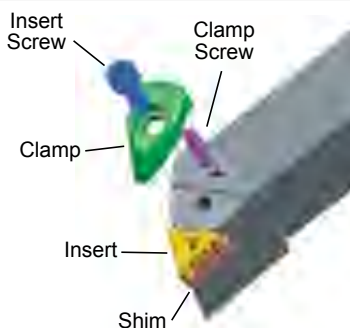
Insert I.C.	Nose Radius
1/4, 5/16	.015
3/8, 1/2	.031
5/8, 3/4	.047
1.0	.062



Overview – Insert Holding Methods

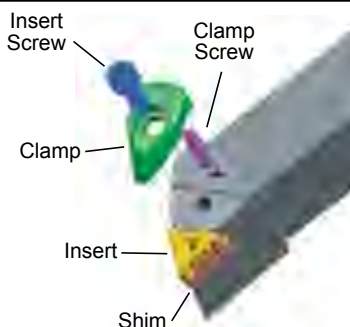
T-Rex Toolholders

- Available in the -LU, -GU and -SU chipbreakers with grades T2000Z, AC700G, AC2000, AC3000, AC610M, and AC630M
- Rigid clamping system ensures accurate insert indexing
- Up to 2.5mm (0.100") depth of cut
- **Six** 55° cutting edges versus the standard **four** edges of a DNMG insert
- **NOW AVAILABLE-Sumiturn Capto System**



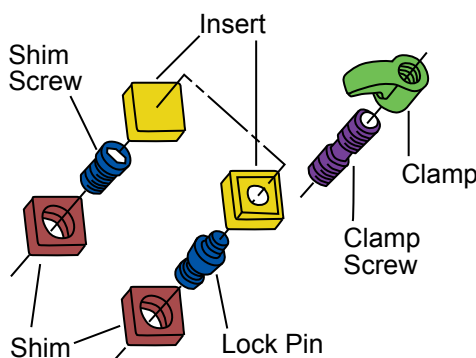
D Type Toolholders

- Stable clamp improves the fracture resistance of the insert
- Better machined workpiece accuracy with improved insert indexing precision
- Easy 1-step insert indexing



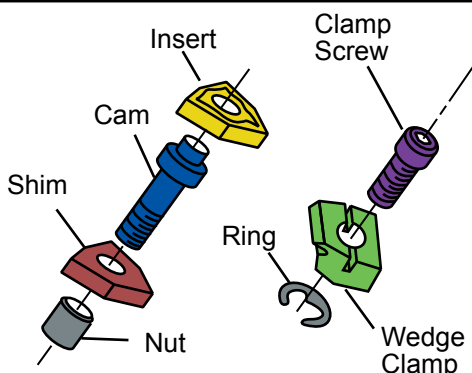
ANSI Standard Combination Toolholders

- A multiple-clamp and lock pin design for NC/CNC machines
- Maximum insert locking power with industry-standard NL lock pin mechanism
- Two different assembly options:
 1. for unground P-Type inserts
 2. for conventional precision-ground or utility-ground inserts with chipbreaker plates



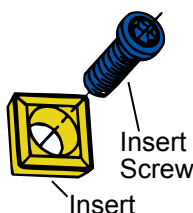
Wedge Clamp Toolholders

- Unique Sumitomo Standard multiple lock design.
- "Wedge Clamp" holding method also acts as pocket wall for Industry standard WNMG Inserts.
- Can be used for -5° end cutting and -5° side cutting applications.
- Available in 3/4" to 1-1/4" square shank sizes.



Screw-On Toolholders

- Qualified holders that conform to ISO-ANSI standards and utilize TORX® holding screws
- Shank sizes ranging from 3/8" to 1-1/2"
- Styles available for inserts with 5°, 7°, 11° clearance angles and advanced chip groove geometries



*TORX is a registered trademark of CamCar Division of Textron, Inc.



Replace your costly DNMG applications with the economical T-REX System!



Features & Benefits

- Available in the -LU, -GU and -SU chipbreakers with grades T2000Z, AC700G, AC2000, AC820P, AC3000, AC610M, and AC630M
- Rigid clamping system ensures accurate insert indexing
- Up to 2.5mm (0.100") depth of cut
- Six** 55° cutting edges versus the standard **four** edges of a DNMG insert



Sumiturn Capto Modular Tooling System

Sumiturn Capto System is a quick change modular system for high productivity. The unique tapered polygon coupling provides extreme rigidity and highly dependable accuracy.

Grade Selection

Grade	Speed (SFM)		
	Steels	Stainless Steels	Gray Cast Irons
T2000Z	700 - 1400	600 - 900	-
AC700G	700 - 1200	500 - 800	600 - 1200
AC2000/AC820P	600 - 800	400 - 700	400 - 1000
AC3000	300 - 700	300 - 600	-
AC610M	500 - 1000	400 - 700	-
AC630M	200 - 800	200 - 600	-

Chipbreaker Selection

Grade	Applications
-LU	Finish to medium cutting
-SU	Finish to medium cutting
-GU	General purpose cutting



-LU

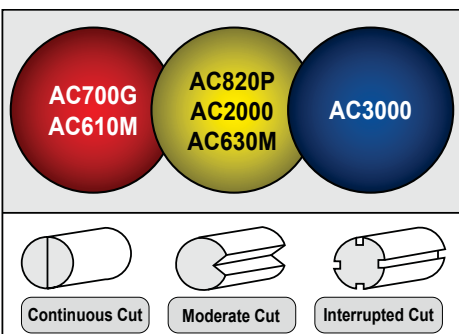


-SU

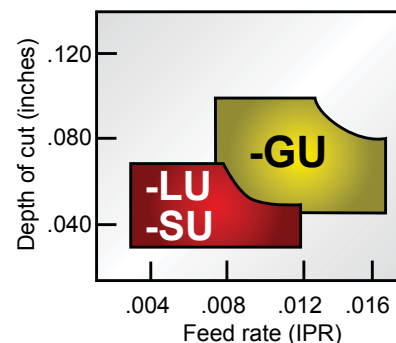
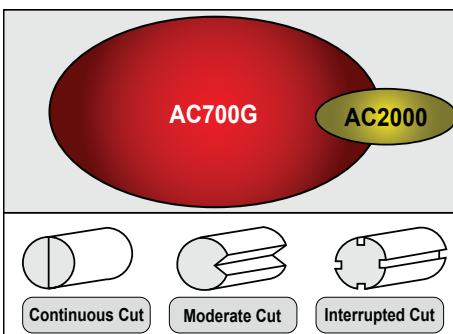


-GU

Steels and Stainless Steels

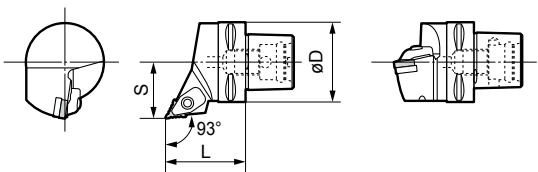
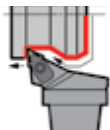


Gray and Ductile Cast Irons



T-REX Sumiturn Capto

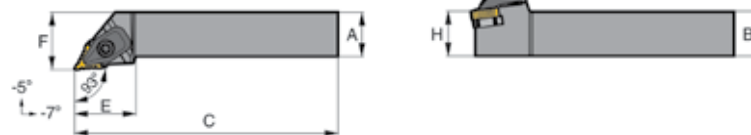
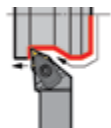
DTR-C Series



Sumitomo Cat. No.		Dimensions (mm)		
Right Hand	Left Hand	ØD	L	S
C4-DTR55CRD17	C4-DTR55CLD17	40mm	60mm	27mm
C5-DTR55CRD17	C5-DTR55CLD17	50mm	60mm	35mm
C6-DTR55CRDX17	C6-DTR55CLDX17	63mm	65mm	45mm

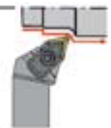
T-REX Toolholder

DTR-C Series



Sumitomo Cat. No.		Dimensions					
Right Hand	Left Hand	A	B	C	E	F	H
DTR55CR123B	DTR55CL123B	0.750"	0.750"	4.500"	1.375"	1.000"	0.750"
DTR55CR163D	DTR55CL163D	1.000"	1.000"	6.000"	1.375"	1.250"	1.000"
DTR55CR2525M17	DTR55CL2525M17	25.0mm	25.0mm	150.0mm	35.0mm	32.0mm	25.0mm

DTR-Q Series



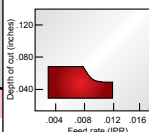
Sumitomo Cat. No.		Dimensions (Inch)					
Right Hand	Left Hand	A	B	C	E	F	H
DTR55QR163D	DTR55QL163D	1.000"	1.000"	6.000"	1.378"	1.260"	1.000"

T-REX Inserts

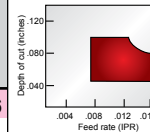
-LU Finishing	Coated					Dimensions (Inch)		
	AC700G	AC2000	AC820P	AC3000	T2000Z	Inscribed Circle	Thickness	Radius
Sumitomo Cat. No.								
TRM551704LU	•	•	•	•	•	0.394	0.197	0.016
TRM551708LU	•	•	•	•	•	0.394	0.197	0.031
TRM551712LU	•	•	•	•	•	0.394	0.197	0.047

Depth of cut (inches)

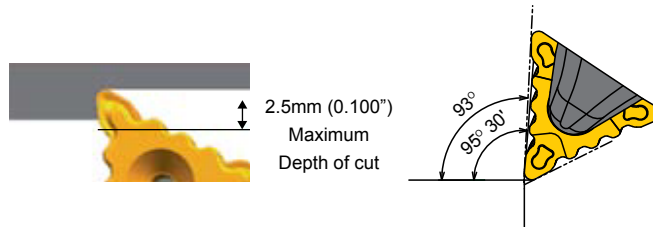
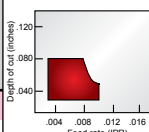
<



-GU Finishing	Coated						Dimensions (Inch)		
	AC700G	AC2000	AC820P	AC3000	AC610M	AC630M	Inscribed Circle	Thickness	Radius
Sumitomo Cat. No.									
TRM551704GU	•	•	•	•	•	•	0.394	0.197	0.016
TRM551708GU	•	•	•	•	•	•	0.394	0.197	0.031
TRM551712GU	•	•	•	•	•	•	0.394	0.197	0.047



-SU Finishing	Coated		Dimensions (Inch)			
	AC610M	AC630M		Inscribed Circle	Thickness	Radius
Sumitomo Cat. No.						
TRM551704SU	•	•		0.394	0.197	0.016
TRM551708SU	•	•		0.394	0.197	0.031
TRM551712SU	•	•		0.394	0.197	0.047

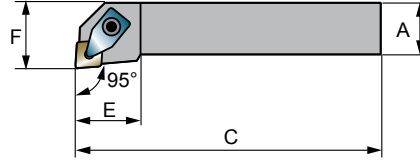
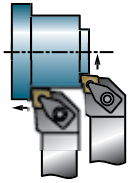


Hardware

Clamp	Spring	Clamp Screw	Shim	Shim Screw	Wrench	Torx Wrench
TRCP3	SSP420	BX0520	TRW5505	BFTX0307N	TSW040	TRX10

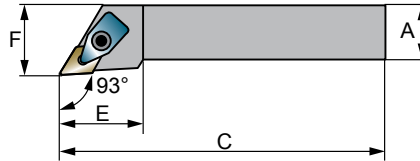
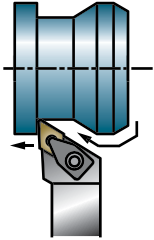
Torque specifications for BX0520 clamp screw = 31-39 inch/lbs.

DCL Series



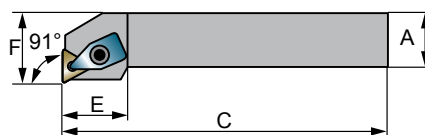
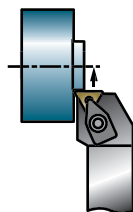
Sumitomo Cat. No.														
Right Hand	Left Hand	Gage Insert	A	B	C	E	F	Clamp	Spring	Cap Screw	Shim	Shim Screw	Wrench	Wrench
DCLNR124B	DCLNL124B	CNMG43-	.750	.750	4.500	1.250	1.000	SCP-2		CNS1204	BFTX0409N	TRX15	LH040	
DCLNR164D	DCLNL164D	CNMG43-	1.000	1.000	6.000	1.250	1.250	SCP-2		CNS1204	BFTX0409N	TRX15	LH040	

DDJ Series

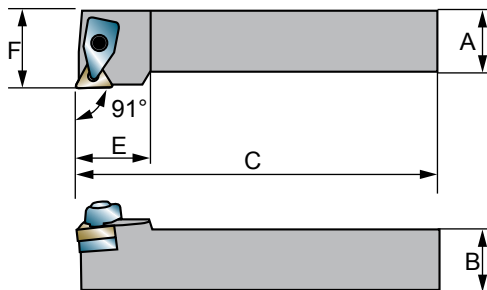
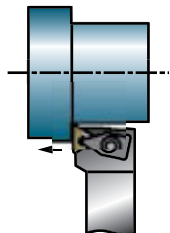


Sumitomo Cat. No.														
Right Hand	Left Hand	Gage Insert	A	B	C	E	F	Clamp	Spring	Cap Screw	Shim	Shim Screw	Wrench	Wrench
DDJNR124B	DDJNL124B	DNMG43-	.750	.750	4.500	1.250	1.000	SCP-2		DNS1504	BFTX0409N	TRX15	LH040	
DDJNR164D	DDJNL164D	DNMG43-	1.000	1.000	6.000	1.250	1.250	SCP-2		DNS1504	BFTX0409N	TRX15	LH040	

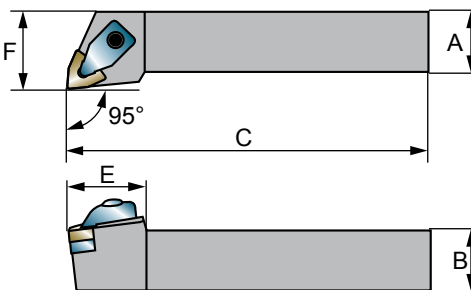
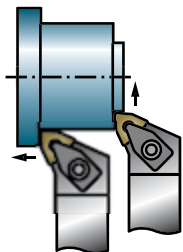
DTF Series



Sumitomo Cat. No.														
Right Hand	Left Hand	Gage Insert	A	B	C	E	F	Clamp	Spring	Cap Screw	Shim	Shim Screw	Wrench	Wrench
DTFNR123B	DTFNL123B	TNMG33-	.750	.750	4.500	1.000	1.000	SCP-1		TNS1604	BFTX0307N	TRX10	LH040	
DTFNR163D	DTFNL163D	TNMG33-	1.000	1.000	6.000	1.000	1.250	SCP-1		TNS1604	BFTX0307N	TRX10	LH040	

DTG Series

Sumitomo Cat. No.			A	B	C	E	F							
Right Hand	Left Hand	Gage Insert						Clamp	Spring	Cap Screw	Shim	Shim Screw	Wrench	Wrench
DTG NR123B	DTG NL123B	TNMG33-	.750	.750	4.500	1.000	1.000			SCP-1	TNS1604	BFTX0307N	TRX10	LH040
DTG NR163D	DTG NL163D	TNMG33-	1.000	1.000	6.000	1.000	1.250			SCP-1	TNS1604	BFTX0307N	TRX10	LH040

DWL Series

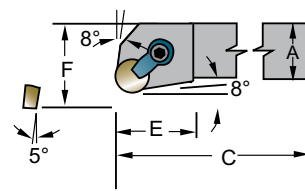
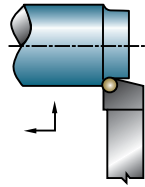
Sumitomo Cat. No.			A	B	C	E	F							
Right Hand	Left Hand	Gage Insert						Clamp	Spring	Cap Screw	Shim	Shim Screw	Wrench	Wrench
DWL NR123B	DWL NL123B	WNMG33-	.750	.750	4.500	1.000	1.000			SCP-1	WNS0804	BFTX0409N	TRX15	LH040
DWL NR124B	DWL NL124B	WNMG43-	.750	.750	4.500	1.250	1.000			SCP-2	WNS0804	BFTX0409N	TRX15	LH040
DWL NR163D	DWL NL163D	WNMG33-	1.000	1.000	6.000	1.000	1.250			SCP-1	WNS0804	BFTX0409N	TRX15	LH040
DWL NR164D	DWL NL164D	WNMG43-	1.000	1.000	6.000	1.250	1.250			SCP-2	WNS0804	BFTX0409N	TRX15	LH040



Select ANSI combination toolholders whenever possible to reduce hardware inventory investments.

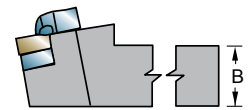
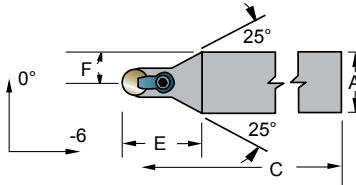
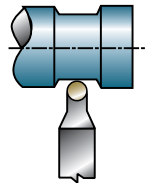


CRG Series



Sumitomo Cat. No.		Gage Insert	A	B	C	E	F				
Right Hand	Left Hand										
CRG NR124D	CRG NL124D	RNG N45	.750	.750	4.500	1.250	1.000	IRSN-43	S-46	CL-9	XNS-58
CRG NR164D	CRG NL164D	RNG N45	1.000	1.000	6.000	1.250	1.250	IRSN-43	S-46	CL-9	XNS-510
CRG NR204D	CRG NL204D	RNG N45	1.250	1.250	6.000	1.250	1.500	IRSN-43	S-46	CL-9	XNS-510

CRD Series



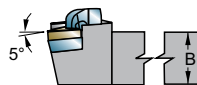
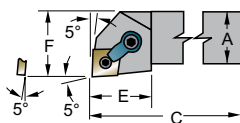
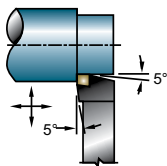
Sumitomo Cat. No.		A	B	C	E	F				
Neutral Hand	Gage Insert						Shim	Shim Screw	Clamp	Clamp Screw
CRDNN164D	RNGN45	1.000	1.000	6.000	1.500	0.500	IRSN-43	S-46	CL-9	XNS-510

ANSI COMBINATION TOOLHOLDERS

Series: MCL • MCK • MCR

ANSI Combination Toolholders

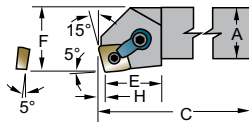
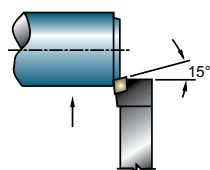
MCL Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Right Hand	Left Hand												
MCLNR083A	MCLNL083A	CNMG32-	.500	.500	4.000	1.000	.750	N/A	NL-33	CL-7	XNS-36	-	-
MCLNR103A	MCLNL103A	CNMG32-	.625	.625	4.000	1.000	.875	N/A	NL-33	CL-7	XNS-36	-	-
MCLNR123B	MCLNL123B	CNMG32-	.750	.750	4.500	1.000	1.000	ICSN-322	NL-34L	CL-7	XNS-36	S-34	-
MCLNR124B	MCLNL124B	CNMG43-	.750	.750	4.500	1.250	1.000	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCLNR164C	MCLNL164C	CNMG43-	1.000	1.000	5.000	1.250	1.250	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCLNR164D	MCLNL164D	CNMG43-	1.000	1.000	6.000	1.250	1.250	ICSN-433	NL-46	CL-9	XNS-58	S-46	-
MCLNR165D	MCLNL165D	CNMG54-	1.000	1.000	6.000	1.375	1.250	ICSN-533	NL-58	CL-12	XNS-510	S-58	-
MCLNR166D	MCLNL166D	CNMG64-	1.000	1.000	6.000	1.500	1.250	ICSN-633	NL-68	CL-12	XNS-510	S-68	-
MCLNR204D	MCLNL204D	CNMG43-	1.250	1.250	6.000	1.250	1.500	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCLNR205D	MCLNL205D	CNMG54-	1.250	1.250	6.000	1.375	1.500	ICSN-533	NL-58	CL-12	XNS-510	S-58	-
MCLNR206D	MCLNL206D	CNMG64-	1.250	1.250	6.000	1.500	1.500	ICSN-633	NL-68	CL-12	XNS-510	S-68	-
MCLNR244D	MCLNL244D	CNMG43-	1.500	1.500	6.000	1.250	2.000	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCLNR245E	MCLNL245E	CNMG54-	1.500	1.500	7.000	1.375	2.000	ICSN-533	NL-58	CL-12	XNS-510	S-58	-
MCLNR246E	MCLNL246E	CNMG64-	1.500	1.500	7.000	1.500	2.000	ICSN-633	NL-68	CL-12	XNS-510	S-68	-

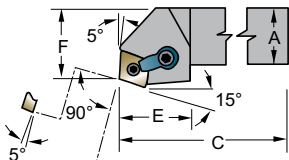
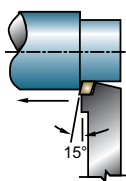
MCK Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F	H						
Right Hand	Left Hand													
MCKNR124B	MCKNL124B	CNMG43-	.750	.750	4.500	1.00	1.000	.122	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCKNR164D	MCKNL164D	CNMG43-	1.000	1.000	6.000	1.00	1.250	.122	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCKNR206D	MCKNL206D	CNMG64-	1.250	1.250	6.000	1.50	1.500	.182	ICSN-633	NL-68	CL-12	XNS-510	S-68	-

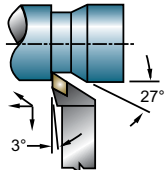
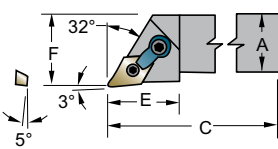
MCR Series

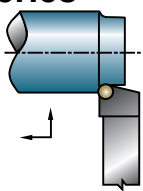
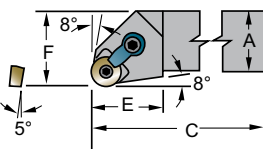
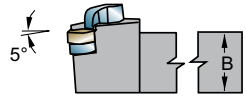


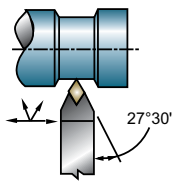
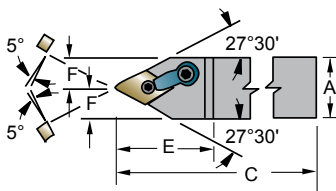
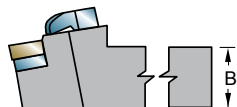
OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Right Hand	Left Hand												
MCRNR124B	MCRNL124B	CNMG43-	.750	.750	4.500	1.250	.750	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCRNR164D	MCRNL164D	CNMG43-	1.000	1.000	6.000	1.250	1.250	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCRNR204D	MCRNL204D	CNMG43-	1.250	1.250	6.000	1.250	1.500	ICSN-433	NL-46	CL-20	XNS-48	S-46	-
MCRNR246E	MCRNL246E	CNMG64-	1.500	1.500	7.000	1.500	2.000	ICSN-633	NL-68	CL-12	XNS-510	S-68	-



MDJ Series														
														
Sumitomo Cat. No.			A	B	C	E	F						OPTIONAL HARDWARE	
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim	
MDJNR123B	MDJNL123B	DNMG33-	.750	.750	4.500	1.250	1.000	IDSN-322	NL-34L	CL-7	XNS-36	S-34	—	
MDJNR124B	MDJNL124B	DNMG43-	.750	.750	4.500	1.250	1.000	IDSN-433	NL-46	CL-6	XNS-36	S-46	IDSN-443	
MDJNR163D	MDJNL163D	DNMG33-	1.000	1.000	6.000	1.250	1.250	IDSN-322	NL-34L	CL-7	XNS-36	S-34	—	
MDJNR164C	MDJNL164C	DNMG43-	1.000	1.000	5.000	1.250	1.250	IDSN-433	NL-46	CL-20	XNS-48	S-46	IDSN-443	
MDJNR164D	MDJNL164D	DNMG43-	1.000	1.000	6.000	1.250	1.250	IDSN-433	NL-46	CL-20	XNS-48	S-46	IDSN-443	
MDJNR204D	MDJNL204D	DNMG43-	1.250	1.250	6.000	1.250	1.500	IDSN-433	NL-46	CL-20	XNS-48	S-46	IDSN-443	

MRG Series														
														
Sumitomo Cat. No.			A	B	C	E	F						OPTIONAL HARDWARE	
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim	
MRGNR124B	MRGNL124B	RNMG43	.750	.750	4.500	1.250	1.000	IRSN-43	NL-46	CL-9	XNS-59	S-46	IRSN-44	
MRGNR164D	MRGNL164D	RNMG43	1.000	1.000	6.000	1.250	1.250	IRSN-43	NL-46	CL-9	XNS-59	S-46	IRSN-44	
MRGNR204D	MRGNL204D	RNMG43	1.250	1.250	6.000	1.250	1.500	IRSN-43	NL-46	CL-9	XNS-59	S-46	IRSN-44	

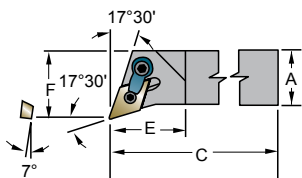
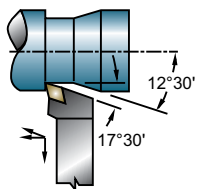
MDP Series														
														
Sumitomo Cat. No.			A	B	C	E	F						OPTIONAL HARDWARE	
Neutral Hand		Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim	
MDPNN123B		DNMG33-	.750	.750	4.500	1.500	.375	IDSN-322	NL-34L	CL-7	XNS-36	S-34	—	
MDPNN164D		DNMG43-	1.000	1.000	6.000	1.750	.500	IDSN-433	NL-46	CL-12	XNS-510	S-46	IDSN-443	

ANSI COMBINATION TOOLHOLDERS

Series: MDQ • MSD • MSR

ANSI Combination Toolholders

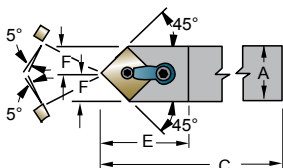
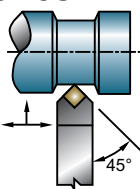
MDQ Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Right Hand	Left Hand	Gage Insert											
MDQNR124B	MDQNL124B	DNMG43-	.750	.750	4.500	1.375	1.000	IDSN-443	NL-46L	CL-20	XNS-48	S-46	IDSN-433
MDQNR164C	MDQNL164C	DNMG43-	1.000	1.000	5.000	1.375	1.250	IDSN-443	NL-46L	CL-20	XNS-48	S-46	IDSN-433
MDQNR164D	MDQNL164D	DNMG43-	1.000	1.000	6.000	1.375	1.250	IDSN-443	NL-46L	CL-20	XNS-48	S-46	IDSN-433
MDQNR204D	MDQNL204D	DNMG43-	1.250	1.250	6.000	1.375	1.500	IDSN-443	NL-46L	CL-20	XNS-48	S-46	IDSN-433

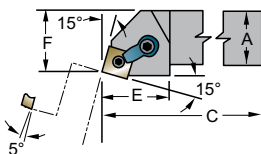
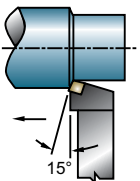
MSD Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Neutral Hand		Gage Insert											
MSDNN124		SNMG43-	.750	.750	4.500	1.375	.375	ISSN-433	NL-46	CL-9	XNS-59	S-46	ISSN-443
MSDNN164		SNMG43-	1.000	1.000	6.000	1.375	.500	ISSN-433	NL-46	CL-9	XNS-59	S-46	ISSN-443

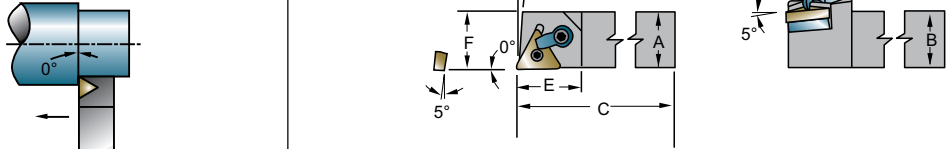
MSR Series

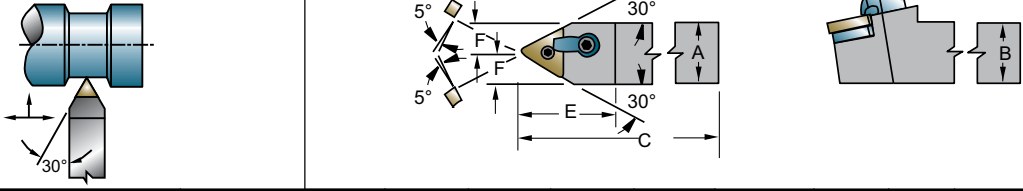


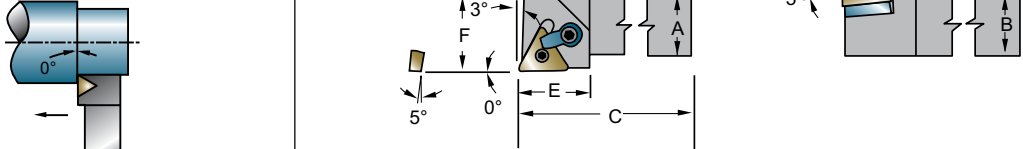
OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Right Hand	Left Hand	Gage Insert											
MSRNR124B	MSRNL124B	SNMG43-	.750	.750	4.500	1.250	.880	ISSN-433	NL-46	CL-9	XNS-59	S-46	ISSN-443
MSRNR164D	MSRNL164D	SNMG43-	1.000	1.000	6.000	1.250	1.130	ISSN-433	NL-46	CL-9	XNS-59	S-46	ISSN-443
MSRNR205D	MSRNL205D	SNMG54-	1.250	1.250	6.000	1.375	1.353	ISSN-533	NL-58	CL-12	XNS-510	S-58	ISSN-543
MSRNR206D	MSRNL206D	SNMG64-	1.250	1.250	6.000	1.500	1.315	ISSN-633	NL-68	CL-12	XNS-510	S-58	ISSN-643



MTA Series									OPTIONAL HARDWARE					
Sumitomo Cat. No.			A	B	C	E	F							
Right Hand	Left Hand	Gage Insert												
MTANR082A	MTANL082A	TNMG22-	.500	.500	4.000	.875	.500	—	NL-23	CL-19	XNS-36	—	—	
MTANR103B	MTANL103B	TNMG32-	.625	.625	4.500	1.000	.645	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTANR123B	MTANL123B	TNMG32-	.750	.750	4.500	1.000	.770	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTANR164D	MTANL164D	TNMG43-	1.000	1.000	6.000	1.375	1.025	ITSN-433	NL-46	CL-9	XNS-59	S-46	ITSN-423	

MTE-S Series									OPTIONAL HARDWARE					
Sumitomo Cat. No.			A	B	C	E	F							
Neutral Hand		Gage Insert												
MTENNS082		TNMG22-	.500	.500	4.000	1.000	.250	N/A	NL-23	CL-19	XNS-36	—	—	
MTENNS103		TNMG32-	.625	.625	4.500	1.125	.312	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTENNS123		TNMG32-	.750	.750	4.500	1.125	.375	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTENNS164		TNMG43-	1.000	1.000	6.000	1.500	.500	ITSN-433	NL-46	CL-9	XNS-59	S-46	ITSN-423	
MTENNS205		TNMG54-	1.250	1.250	7.000	1.625	.625	ITSN-534	NL-58	CL-9	XNS-510	—	—	

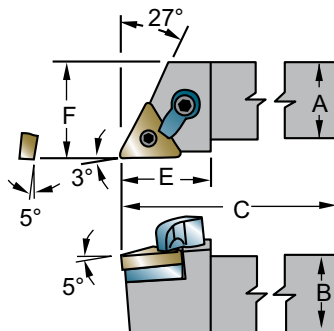
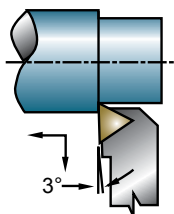
MTG Series									OPTIONAL HARDWARE					
Sumitomo Cat. No.			A	B	C	E	F							
Right Hand	Left Hand	Gage Insert												
MTGNR103B	MTGNL103B	TNMG32-	.625	.625	4.500	1.000	.875	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTGNR123B	MTGNL123B	TNMG32-	.750	.750	4.500	1.000	1.000	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323	
MTGNR164D	MTGNL164D	TNMG43-	1.000	1.000	6.000	1.375	1.250	ITSN-432	NL-46	CL-9	XNS-59	S-46	ITSN-423	

ANSI COMBINATION TOOLHOLDERS

Series: MTJ • MTJ-S

ANSI Combination Toolholders

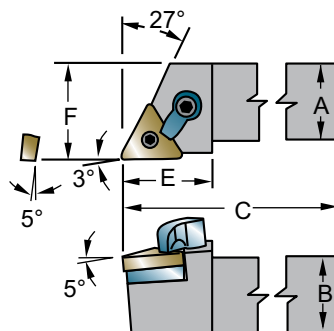
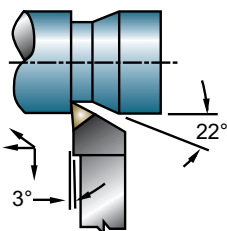
MTJ Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F	     					
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim
MTJNR123B	MTJNL123B	TNMG32-	.750	.750	4.500	1.000	1.000	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323
MTJNR163D	MTJNL163D	TNMG32-	1.000	1.000	6.000	1.000	1.250	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323
MTJNR164D	MTJNL164D	TNMG43-	1.000	1.000	6.000	1.000	1.250	ITSN-433	NL-46	CL-9	XNS-510	S-46	ITSN-423

MTJ-S Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F	     					
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim
MTJNRS123	MTJNLS123	TNMG32-	.750	.750	4.500	1.120	1.000	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323
MTJNRS124	MTJNLS124	TNMG43-	.750	.750	4.500	1.190	1.000	ITSN-433	NL-46	CL-9	XNS-58	S-46	ITSN-423
MTJNRS163	MTJNLS163	TNMG32-	1.000	1.000	6.000	1.120	1.250	ITSN-333	NL-34L	CL-6	XNS-36	S-34	ITSN-323
MTJNRS164	MTJNLS164	TNMG43-	1.000	1.000	6.000	1.190	1.250	ITSN-433	NL-46	CL-9	XNS-510	S-46	ITSN-423
MTJNRS204	MTJNLS204	TNMG43-	1.250	1.250	6.000	1.190	1.250	ITSN-433	NL-46	CL-9	XNS-510	S-46	ITSN-423



MVJ Series

Sumitomo Cat. No.

Right Hand

Left Hand

Gage Insert

A

B

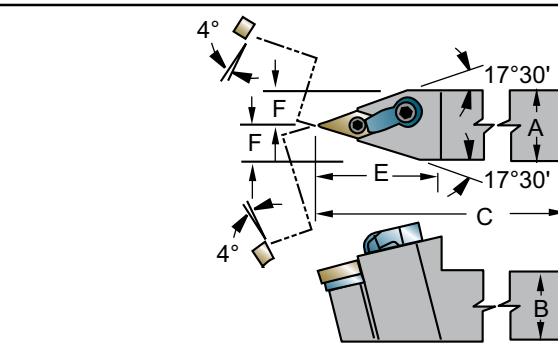
C

E

F

Right Hand	Left Hand	Gage Insert	A	B	C	E	F						
MVJNR163D	MVJNL163D	VNMG33-	1.000	1.000	6.000	1.687	1.250	IVSN-322	NL-34L	CL-30	XNS-510	S-34	–
MVJNR164C	MVJNL164C	VNMG43-	1.000	1.000	5.000	2.000	1.250	IVSN-432	NL-46	CL-30	XNS-510	S-46	–
MVJNR164D	MVJNL164D	VNMG43-	1.000	1.000	6.000	2.000	1.250	IVSN-432	NL-46	CL-30	XNS-510	S-46	–
MVJNR203D	MVJNL203D	VNMG33-	1.250	1.250	6.000	1.687	1.500	IVSN-322	NL-34L	CL-30	XNS-510	S-34	–
MVJNR204D	MVJNL204D	VNMG43-	1.250	1.250	6.000	2.000	1.500	IVSN-432	NL-46	CL-30	XNS-510	S-46	–

OPTIONAL HARDWARE

MVV Series													OPTIONAL HARDWARE	
Sumitomo Cat. No.		A	B	C	E	F								
Neutral Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim		
MVVNN123B	VNMG33-	.750	.750	4.500	1.800	.375	IVSN-322	NL-34L	CL-30	XNS-510	S-34	—		
MVVNN163D	VNMG33-	1.000	1.000	6.000	1.800	.500	IVSN-322	NL-34L	CL-30	XNS-510	S-34	—		
MVVNN164D	VNMG43-	1.000	1.000	6.000	2.250	.500	IVSN-432	NL-46	CL-30	XNS-510	S-46	—		



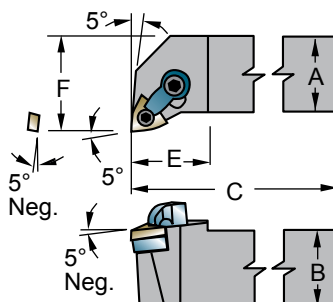
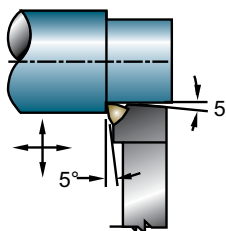
For minimum tool deflection and to reduce possible chatter maintain a 1:1 ratio of shank size to tool overhang (as measured from the tool post).
Ex. 1" shank = 1" of holder overhang

ANSI COMBINATION TOOLHOLDERS

Series: MWL • WWL

ANSI Combination Toolholders

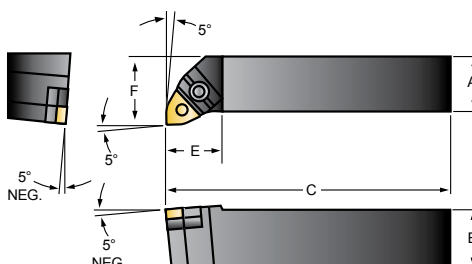
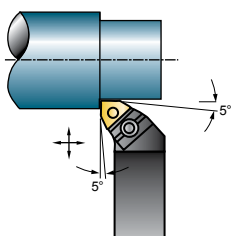
MWL Series



OPTIONAL HARDWARE

Sumitomo Cat. No.			A	B	C	E	F						
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim Screw	Shim
MWLN124B	MWLN124B	WNMG43-	.750	.750	4.500	1.250	1.000	IWSN-432	NL-46	CL-20	XNS-48	—	—
MWLN163C	MWLN163C	WNMG33-	1.000	1.000	5.000	1.000	1.250	IWSN-322	NL-34L	CL-7	XNS-36	—	—
MWLN163D	MWLN163D	WNMG33-	1.000	1.000	6.000	1.000	1.250	IWSN-322	NL-34L	CL-7	XNS-36	—	—
MWLN164C	MWLN164C	WNMG43-	1.000	1.000	5.000	1.125	1.250	IWSN-433	NL-46	CL-20	XNS-48	—	—
MWLN164D	MWLN164D	WNMG43-	1.000	1.000	6.000	1.250	1.250	IWSN-432	NL-46	CL-20	XNS-48	—	—
MWLN204D	MWLN204D	WNMG43-	1.250	1.250	6.000	1.250	1.500	IWSN-432	NL-46	CL-20	XNS-48	—	—
MWLN243D	MWLN243D	WNMG33-	1.500	1.500	6.000	1.000	2.000	IWSN-322	NL-34L	CL-7	XNS-36	—	—
MWLN244D	MWLN244D	WNMG43-	1.500	1.500	6.000	1.125	2.000	IWSN-433	NL-46	CL-20	XNS-48	—	—

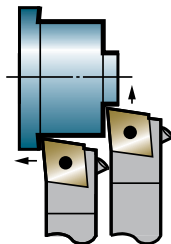
WWL Series



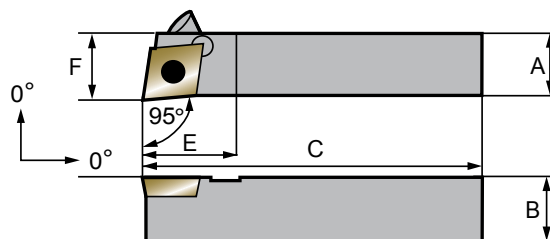
Sumitomo Cat. No.			A	B	C	E	F							
Right Hand	Left Hand	Gage Insert						Shim	Cam	Nut	Wedge Clamp	Clamp Screw	Ring	Wrench
WWLN124B	WWLN124B	WNMG43-	.750	.750	4.500	1.250	1.000	SWW-433	MP-416	CPM-43S	MWW-40	BHA-0625	ER05	LH030
WWLN164D	WWLN164D	WNMG43-	1.000	1.000	6.000	1.250	1.250	SWW-433	MP-420	CPM-43N	MWW-40	BHA-0625	ER05	LH040
WWLN165D	WWLN165D	WNMG54-	1.000	1.000	6.000	1.593	1.500	SWW-544	MP-531	CPM-54N	MWW-50	BHA-0834	ER07	LH040
WWLN204D	WWLN204D	WNMG43-	1.250	1.250	6.000	1.250	1.500	SWW-433	MP-420	CPM-43N	MWW-40	BHA-0625	ER05	LH040
WWLN205D	WWLN205D	WNMG54-	1.250	1.250	6.000	1.593	1.500	SWW-544	MP-534	CPM-54N	MWW-50	BHA-0834	ER07	LH060



PCLC R/LSeries



Side lever locking holders

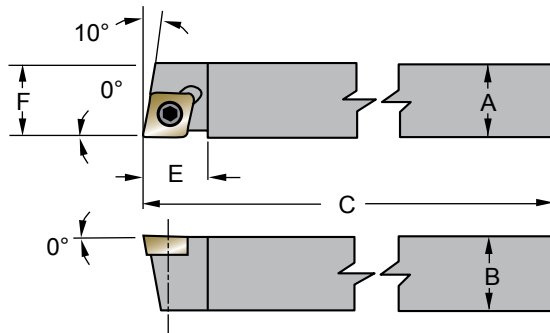
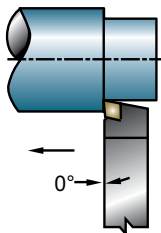


Sumitomo Cat. No.			Dimensions (inch/mm)									
Right Hand	Left Hand	7° Positive Gage Insert	Stock	A	B	C	E	F				
PCLCR062D	PCLCL062D	CCMT21.51	●	.375	.375	6.000	.472	.395	LCL06	BTT0407	LP07	TH020
PCLCR083D	PCLCL083D	CCMT32.52	●	.500	.500	6.000	.591	.520	LCL09	BTT0407	LP06	TH020
PCLCR103D	PCLCL103D	CCMT32.52	●	.625	.625	6.000	.630	.645	LCL09	BTT0411	LP06	TH020
PCLCR1010-K06	PCLCL1010-K06	CCMT21.51	★	10.0	10.0	125.0	12.0	10.5	LCL06	BTT0407	LP07	TH020
PCLCR1212-K09	PCLCL1212-K09	CCMT32.52	★	12.0	12.0	150.0	16.0	12.5	LCL09	BTT0407	LP06	TH020
PCLCR1616-M09	PCLCL1616-M09	CCMT32.52	★	16.0	16.0	150.0	16.0	16.5	LCL09	BTT0411	LP06	TH020

● = USA stocked item

★ = Worldwide Warehouse

SCAC R/LSeries

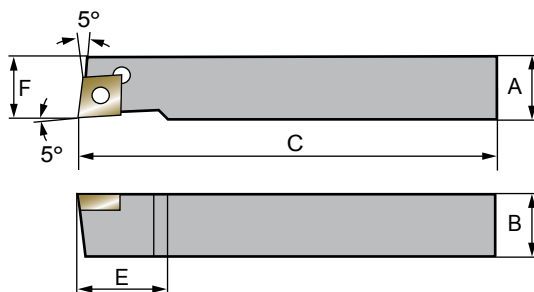
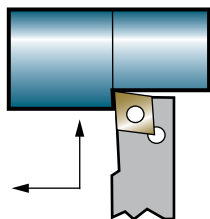


Sumitomo Cat. No.			Dimensions (inch/mm)							
Right Hand	Left Hand	7° Positive Gage Insert	Stock	A	B	C	E	F		
SCACR062D	SCACL062D	CCMT21.51	●	.375	.375	6.000	0.440	0.375	ST-21.5	TRX08
SCACR083D	SCACL083D	CCMT32.52	●	.500	.500	6.000	0.625	0.500	ST-32.5	TRX15
SCACR103D	SCACL103D	CCMT32.52	●	.625	.625	6.000	0.500	0.625	ST-32.5	TRX15
SCACR1010-06	SCACL1010-06	CCMT21.51	★	10.0	10.0	100.0	18.0	10.5	ST-21.5	TRX08
SCACR1212-09	SCACL1212-09	CCMT32.52	★	12.0	12.0	100.0	18.0	12.5	ST-32.5	TRX15
SCACR1616-09	SCACL1616-09	CCMT32.52	★	16.0	16.0	100.0	18.0	16.5	ST-32.5	TRX15

● = USA stocked item

★ = Worldwide Warehouse

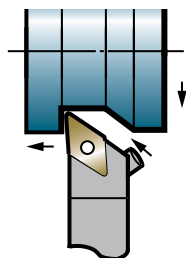
SCNC R/LSeries



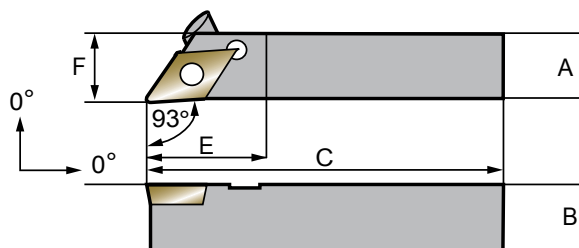
Sumitomo Cat. No.			Dimensions (inch/mm)							
Right Hand	Left Hand		Stock	A	B	C	E	F		
SCNCR062D	SCNCL062D	CCMT21.51	•	.375	.375	6.000	0.500	0.375	ST-21.5	TRX08
SCNCR083D	SCNCL083D	CCMT32.52	•	.500	.500	6.000	0.620	0.500	ST-32.5	TRX15
SCNCR103D	SCNCL103B	CCMT32.52	•	.625	.625	6.000	0.500	0.625	ST-32.5	TRX15
SCNCR1010-06	SCNCL1010-06	CCMT21.51		10.0	10.0	150.0	18.0	10.5	ST-21.5	TRX08
SCNCR1212-09	SCNCL1212-09	CCMT32.52		12.0	12.0	150.0	18.0	12.5	ST-32.5	TRX15
SCNCR1616-09	SCNCL1616-09	CCMT32.52		16.0	16.0	150.0	18.0	16.5	ST-32.5	TRX15

• = USA stocked item

PDJC R/LSeries



Side lever locking holders



Sumitomo Cat. No.			Dimensions (Inch/mm)									
Right Hand	Left Hand		Stock	A	B	C	E	F				
PDJCR062D	PDJCL062D	DCMT21.51	•	.375	.375	6.000	.472	.395	LCL06	BTT0407	LP04	TH020
PDJCR083D	PDJCL083D	DCMT32.52	•	.500	.500	6.000	.787	.520	LCL09	BTT0407	LP07	TH020
PDJCR103D	PDJCL103D	DCMT32.52	•	.625	.625	6.000	.787	.645	LCL09	BTT0411	LP07	TH020
PDJCR1010-K07	PDJCL1010-K07	DCMT21.51	★	10.0	10.0	125.0	15.0	10.5	LCL06	BTT0407	LP04	TH020
PDJCR1212-M11	PDJCL1212-M11	DCMT32.52	★	12.0	12.0	150.0	20.0	12.5	LCL09	BTT0407	LP07	TH020
PDJCR1616-M11	PDJCL1616-M11	DCMT32.52	★	16.0	16.0	150.0	20.0	16.5	LCL09	BTT0411	LP07	TH020

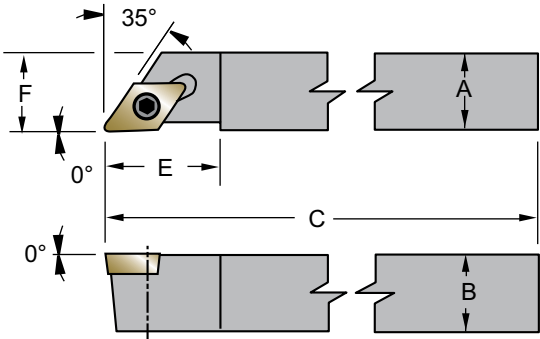
• = USA stocked item

★ = Worldwide Warehouse item

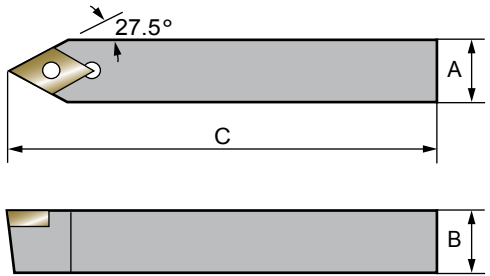


ANSI-ISO Screw-On Small Shank Toolholders have common hardware and superior Torx® locking insert screws, for maximum holding power.



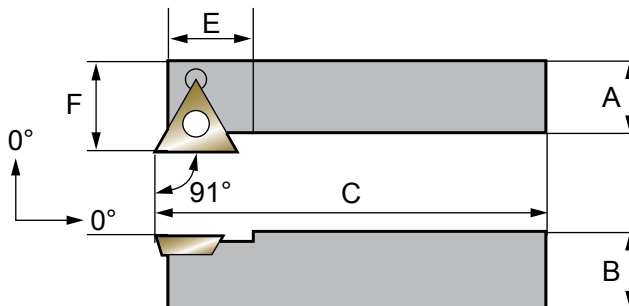
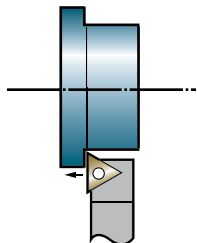
SDAC R/LSeries										
Sumitomo Cat. No.			Dimensions (inch/mm)							
Right Hand	Left Hand	7° Positive Gage Insert	Stock	A	B	C	E	F	Insert Screw	Torx Wrench
SDACR062D	SDACL062D	DCMT21.51	•	.375	.375	6.000	0.625	0.375	ST-21.5	TRX06
SDACR082D	SDACL082D	DCMT21.51	•	.500	.500	6.000	0.875	0.500	ST-32.5	TRX06
SDACR103D	SDACL103D	DCMT32.52	•	.625	.625	6.000	0.875	0.625	ST-32.5	TRX08
SDACR1010-07	SDACL1010-07	DCMT21.51	★	10.0	10.0	100.0	18.0	10.5	ST-21.5	TRX06
SDACR1212-11	SDACL1212-11	DCMT32.52	★	12.0	12.0	100.0	18.0	12.5	ST-32.5	TRX08
SDACR1616-11	SDACL1616-11	DCMT32.52	★	16.0	16.0	100.0	18.0	16.5	ST-32.5	TRX08

• = USA stocked item ★ = Worldwide Warehouse item

SDPCN Series										
Sumitomo Cat. No.			Dimensions (inch/mm)							
Neutral Hand		7° Positive Gage Insert	Stock	A	B	C			Insert Screw	Torx Wrench
SDPCN062D		DCMT21.51	•	.375	.375	6.000			ST-21.5	TRX06
SDPCN083D		DCMT32.52	•	.500	.500	6.000			ST-32.5	TRX08
SDPCN103D		DCMT32.52	•	.625	.625	6.000			ST-32.5	TRX08
SDPCN1010-07		DCMT21.51		10.0	10.0	150.0			ST-21.5	TRX06
SDPCN1212-11		DCMT32.52		12.0	12.0	150.0			ST-32.5	TRX08
SDPCN1616-11		DCMT32.52		16.0	16.0	150.0			ST-32.5	TRX08

• = USA stocked item

STAC R/LSeries

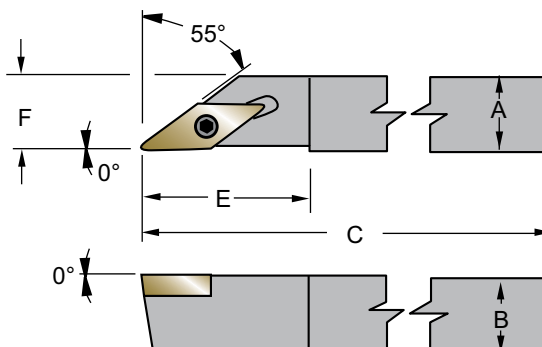
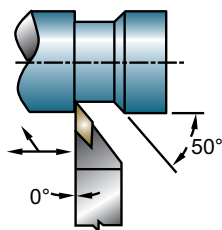


Sumitomo Cat. No.			Dimensions (inch/mm)							
			Stock	A	B	C	E	F		
Right Hand	Left Hand	7° Positive Gage Insert							Insert Screw	Torx Wrench
STACR062D	STACL062D	TCMT21.51	•	.375	.375	6.000	0.625	0.375	ST-21.5	TRX08
STACR082D	STACL082D	TCMT21.51	•	.500	.500	6.000	0.625	0.500	ST-21.5	TRX08
STACR103D	STACL103D	TCMT32.52	•	.625	.625	6.000	0.750	0.625	ST-32.5	TRX15
STACR1010-11	STACL1010-11	TCMT21.51	★	10.0	10.0	100.0	16.0	12.0	ST-21.5	TRX08
STACR1212-11	STACL1212-11	TCMT21.51	★	12.0	12.0	100.0	16.0	16.0	ST-21.5	TRX08
STACR1616-16	STACL1616-16	TCMT32.52	★	16.0	16.0	100.0	16.0	20.0	ST-32.5	TRX15

• = USA stocked item

★ = Worldwide Warehouse item

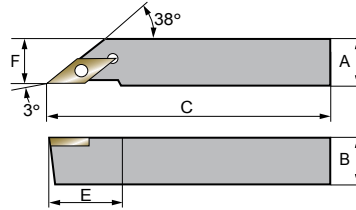
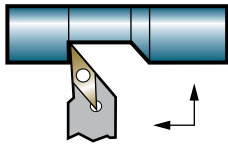
SVAB R/LSeries



Sumitomo Cat. No.			Dimensions (inch/mm)							
			Stock	A	B	C	E	F		
Right Hand	Left Hand	5° Positive Gage Insert							Insert Screw	Torx Wrench
SVABR062D	SVABL062D	VBMT221	•	.375	.375	6.000	0.875	0.375	ST-21.5	TRX08
SVABR082D	SVABL082D	VBMT221	•	.500	.500	6.000	0.875	0.500	ST-21.5	TRX08
SVABR103D	SVABL103D	VBMT332	•	.625	.625	6.000	1.375	0.625	ST-32.5	TRX15
SVABR1010-11	SVABL1010-11	VBMT221		10.0	10.0	150.0	22.0	10.0	ST-21.5	TRX08
SVABR1212-11	SVABL1212-11	VBMT221		12.0	12.0	150.0	22.0	12.0	ST-21.5	TRX08
SVABR1616-16	SVABL1616-16	VBMT332		16.0	16.0	150.0	35.0	16.0	ST-32.5	TRX15

• = USA stocked item

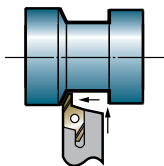
SVNB R/L Series



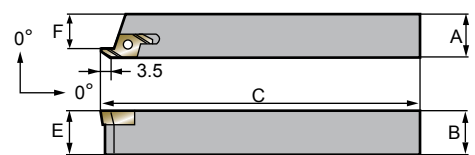
Sumitomo Cat. No.			Dimensions (inch/mm)							
Right Hand	Left Hand	5° Positive Gage Insert	Stock	A	B	C	E	F		
SVNBR062D	SVNBL062D	VBMT22-	•	.375	.375	6.000	0.940	0.375	ST-21.5	TRX08
SVNBR082D	SVNBL082D	VBMT22-	•	.500	.500	6.000	0.940	0.500	ST-21.5	TRX08
SVNBR103D	SVNBL103D	VBMT33-	•	.625	.625	6.000	1.440	0.620	ST-32.5	TRX15
SVNBR1010-11	SVNBL1010-11	VBMT22-		10.0	10.0	150.0	24.0	10.0	ST-21.5	TRX08
SVNBR1212-11	SVNBL1212-11	VBMT22-		12.0	12.0	150.0	24.0	12.0	ST-21.5	TRX08
SVNBR1616-16	SVNBL1616-16	VBMT33-		16.0	16.0	150.0	37.0	16.0	ST-32.5	TRX15

• = USA stocked item

SBT R Series



Back Turning Holders

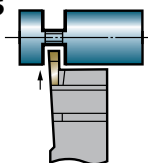


Sumitomo Cat. No.			Dimensions (Inch/mm)							
Right Hand	Left Hand	Gage Insert	Stock	A	B	C	E	F		
SBTR3506		BTR35	•	.375	.375	6.000	.375	7.500	BFTX0307N	TRX10
SBTR3508		BTR35	•	.500	.500	6.000	.500	9.500	BFTX0307N	TRX10
SBTR3510		BTR35	•	.625	.625	6.000	.625	13.500	BFTX0307N	TRX10
SBTR351010		BTR35	★	10.0	10.0	150.0	10.0	7.5	BFTX0307N	TRX10
SBTR351212		BTR35	★	12.0	12.0	150.0	12.0	9.5	BFTX0307N	TRX10
SBTR351616		BTR35	★	16.0	16.0	150.0	16.0	13.5	BFTX0307N	TRX10

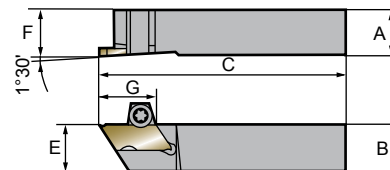
• = USA stocked item

★ = Worldwide Warehouse item

SCT R/L Series



Cut-Off Holders



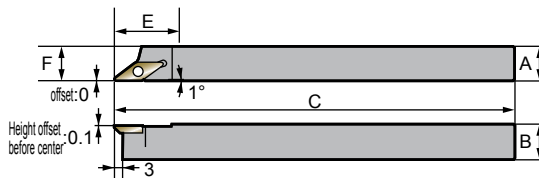
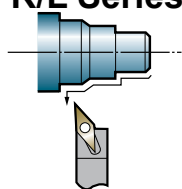
Sumitomo Cat. No.			Dimensions (Inch/mm)									
			Stock	A	B	C	E	F	G			
Right Hand	Left Hand	Gage Insert								Insert Screw		Torx Wrench
			Right hand	Left hand								
SCTR08	SCTL08	CTR12	●	.500	.500	6.000	.500	.500	.591	BFTX0410T8R	BFTX0410T8L	TRX08
SCTR10	SCTL10	CTR12	●	.625	.625	6.000	.625	.625	.591	BFTX0410T8R	BFTX0410T8L	TRX08
SCTR12	SCTL12	CTR12	●	.750	.750	6.000	.750	.750	.591	BFTX0410T8R	BFTX0410T8L	TRX08
SCTR1010	SCTL1010	CTR12	★	10.0	10.0	150.0	10.0	10.0	15.0	BFTX0410T8R	BFTX0410T8L	TRX08
SCTR1212	SCTL1212	CTR12	★	12.0	12.0	150.0	12.0	12.0	15.0	BFTX0410T8R	BFTX0410T8L	TRX08
SCTR1616	SCTL1616	CTR12	★	16.0	16.0	150.0	16.0	16.0	15.0	BFTX0410T8R	BFTX0410T8L	TRX08

• = USA stocked item

★ = Worldwide Warehouse item



SPB R/L Series

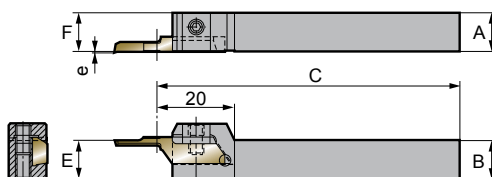
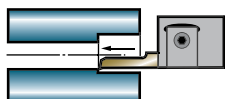


Sumitomo Cat. No.			Dimensions (Inch/mm)							
Right Hand	Left Hand	Gage Insert	Stock	A	B	C	E	F		
SPBR063D	SPBL063D	PBV1102	•	.375	.375	6.000	.669	.375	BFTX02505N	LT08-06
SPBR083D	SPBL083D	PBV1102	•	.500	.500	6.000	.669	.500	BFTX02505N	LT08-06
SPBR1010-60	SPBL1010-60	PBV1102	★	10.0	10.0	150.0	17.0	10.5	BFTX02505N	LT08-06
SPBR1212-60	SPBL1212-60	PBV1102	★	12.0	12.0	150.0	17.0	12.5	BFTX02505N	LT08-06

• = USA stocked item

★ = Worldwide Warehouse item

CKBR Series

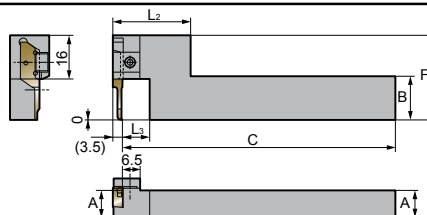
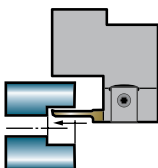


Sumitomo Cat. No.			Dimensions (Inch/mm)								
Right Hand		Gage Insert	Stock	A	B	C	E	F			
CKBR062D		KBMXR	•	.375	.375	6.000	.375	.375	CKBW16	WB4-8	LH020
CKBR082D		KBMXR	•	.500	.500	6.000	.500	.500	CKBW16	WB4-8	LH020
CKBR102D		KBMXR	•	.625	.625	6.000	.625	.625	CKBW16	WB4-8	LH020
CKBR1010-16		KBMXR	★	10.0	10.0	150.0	10.0	10.0	CKBW16	WB4-8	LH020
CKBR1212-16		KBMXR	★	12.0	12.0	150.0	12.0	12.0	CKBW16	WB4-8	LH020
CKBR1616-16		KBMXR	★	16.0	16.0	150.0	16.0	16.0	CKBW16	WB4-8	LH020

• = USA stocked item

★ = Worldwide Warehouse item

CKBSR Series



Sumitomo Cat. No.			Dimensions (Inch/mm)									
Right Hand		Gage Insert	Stock	A	B	C	F	L ₂	L ₃			
CKBSR062D		KBMXL	•	.375	.625	6.000	1.220	1.125	.393	CKBW16	WB4-8	LH020
CKBSR082D		KBMXL	•	.500	.625	6.000	1.220	1.125	.393	CKBW16	WB4-8	LH020
CKBSR102D		KBMXL	•	.625	.625	6.000	1.220	1.125	.393	CKBW16	WB4-8	LH020
CKBSR1010-16-11		KBMXL	★	10.0	16.0	150.0	31.0	28.5	10.0	CKBW16	WB4-8	LH020
CKBSR1212-16-11		KBMXL	★	12.0	16.0	150.0	31.0	28.5	10.0	CKBW16	WB4-8	LH020
CKBSR1616-16-11		KBMXL	★	16.0	16.0	150.0	31.0	28.5	16.0	CKBW16	WB4-8	LH020

• = USA stocked item

★ = Worldwide Warehouse item





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A

Boring Bar Type

A



Solid Steel Bar with Coolant Hole

B



Solid Steel Bar with Anti-Vibration Device

E



Carbide Bar with Fixed Steel Head & Coolant Hole

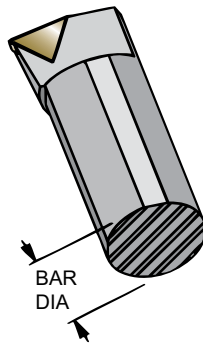
J



Heavy Metal Bar with Coolant Hole

16-

Boring Bar Diameter



This indicates D dimensions in sixteenths (1/16).

examples:

08 = 8/16 = 1/2" Diameter

16 = 16/16 = 1.0" Diameter

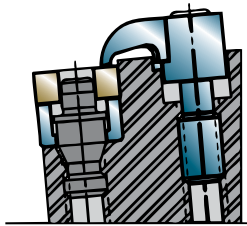
24 = 24/16 = 1-1/2" Diameter

M

Insert Holding

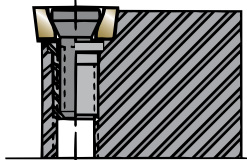
M

Clamp and Lock Pin



S

Screw Lock Only



C

Insert Shape

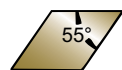
C

Diamond



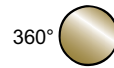
D

Diamond



R

Round



S

Square



T

Triangle



V

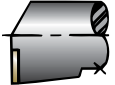
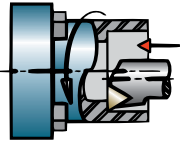
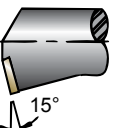
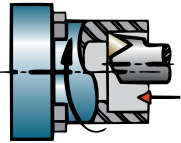
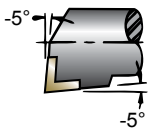
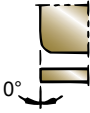
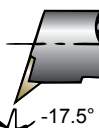
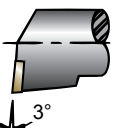
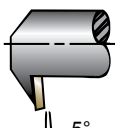
Diamond



W

Trigon

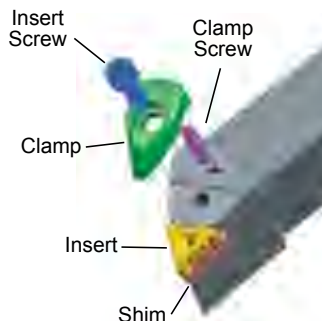


L	N	R	4
Boring Bar Style	Insert Relief Angle	Hand	Insert Size
F  0° End Cutting	B  5°	R Right Hand 	
K  15° End Cutting	C  7°	L Left Hand 	For equal sided inserts this indicates the inscribed circle (I.C.) in eighths (1/8).
L  -5° End and Side Cutting	N  0°	examples,	$6 = 6/8 = 3/4"$ I.C.
Q  -17.5° End Cutting	P  11°	$4 = 4/8 = 1/2"$ I.C.	$2.5 = 2.5/8 = 5/16"$ I.C.
U  -3° End Cutting			
X  -5° Back Facing/Boring			

Overview – Insert Holding Methods

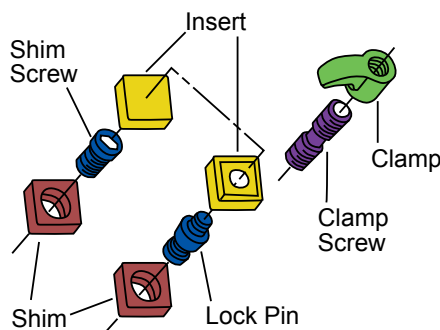
T-Rex Boring Bars

- Available in the -LU, -GU and -SU chipbreakers with grades T2000Z, AC700G, AC2000, AC3000, AC610M, and AC630M
- Rigid clamping system ensures accurate insert indexing
- Up to 2.5mm (0.100") depth of cut
- **Six** 55° cutting edges versus the standard **four** edges of a DNMG insert



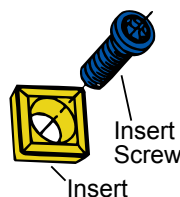
ANSI Standard Combination Boring Bars with through coolant

- Proven lock pin for negative rake geometry inserts
- Ideal for unground, negative rake inserts or utility and precision ground inserts
- Available with integral coolant delivery



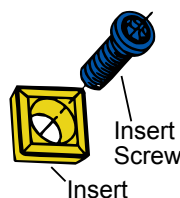
ANSI/ISO "Screw-On" Boring Bars

- Available with steel, carbide, or heavy metal shanks, ranging in size from 3/8" to 1" and coolant through the tool
- Designed to ISO-ANSI standards
- Uses TORX® insert holding screws
- Available with Anti-Vibration steel shanks



X-BAR Boring Bars

- Special dampener mechanism eliminates chatter
- Up to 6X L/D overhang (depth / bar diameter)
- Cost effective solution to carbide bars when deep hole boring
- Available in both coolant-through and non-coolant-through
- Effectively rough bores deep holes
- Bars available with CCMT, TCMT and TPMT style inserts



Sumitomo Design Boring Bars

- Styles available using negative inserts and 5°, 7°, 11° and 15° positive inserts
- For bores as small as .228" using the BSWJO design
- Available in steel or carbide shanks
- Various locking methods / unique Sumitomo designs



Features & Benefits

- Available in the -LU, -GU and -SU chipbreakers with grades T2000Z, AC700G, AC2000, AC3000, AC610M, and AC630M
- Rigid clamping system ensures accurate insert indexing
- Up to 2.5mm (0.100") depth of cut
- **Six** 55° cutting edges versus the standard **four** edges of a DNMG insert



T-REX Boring Bar

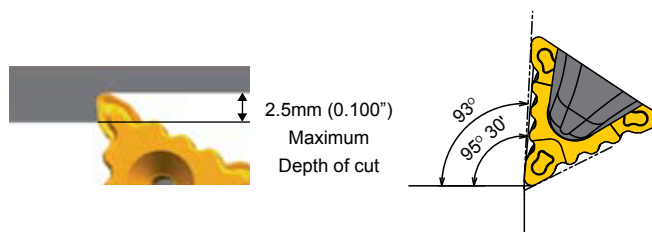
A-DTR Series							
Sumitomo Cat. No.		Dimensions (Inch)					
Right Hand	Left Hand	D	C	F	H	K	Min. Bore
A20DTR55CR3	A20DTR55CL3	1.250"	10.000"	0.875"	0.309"	-12°	1.750"
A24DTR55CR3	A24DTR55CL3	1.500"	12.000"	1.000"	0.309"	-10°	2.000"

T-REX Inserts

-LU Finishing	Coated					Dimensions (Inch)			
	Sumitomo Cat. No.	AC700G	AC2000	AC820P	AC3000	T2000Z	Inscribed Circle	Thickness	
TRM551704LU	•	•	•	•	•	•	0.394	0.197	0.016
TRM551708LU	•	•	•	•	•	•	0.394	0.197	0.031
TRM551712LU	•	•	•	•	•	•	0.394	0.197	0.047

-GU Finishing	Coated						Dimensions (Inch)			
	Sumitomo Cat. No.	AC700G	AC2000	AC820P	AC3000	AC610M	AC630M	Inscribed Circle	Thickness	
TRM551704GU	•	•	•	•	•	•	0.394	0.197	0.016	
TRM551708GU	•	•	•	•	•	•	0.394	0.197	0.031	
TRM551712GU	•	•	•	•	•	•	0.394	0.197	0.047	

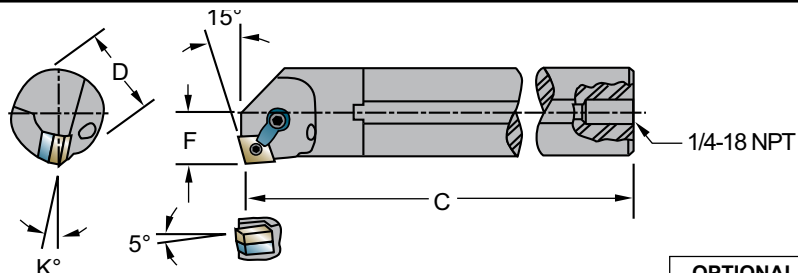
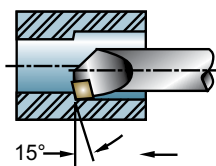
-SU Finishing	Coated				Dimensions (Inch)			
	Sumitomo	AC610M	AC630M		Inscribed Circle	Thickness	Radius	
	TRM551704SU	•	•		0.394	0.197	0.016	
	TRM551708SU	•	•		0.394	0.197	0.031	
	TRM551712SU	•	•		0.394	0.197	0.047	



Hardware

Clamp	Spring	Clamp Screw	Shim	Shim Screw	Wrench	Torx Wrench
TRCP3	SSP420	BX0520	TRW5505	BFTX0307N	TSW040	TRX10

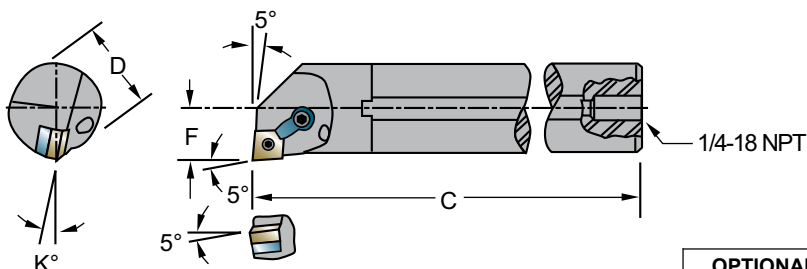
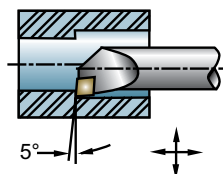
Torque specifications for BX0520 clamp screw = 31-39 inch/lbs.

A-MCK

Solid steel bar with coolant hole

**OPTIONAL
HARDWARE**

Sumitomo Cat. No.			D	C	F	K°	Min. Bore						
Right Hand	Left Hand	Gage Insert											
A20MCKNR4	A20MCKNL4	CNMG432	1.250	14.000	.765	14°	1.470	ICSN-433	NL-46	CL-20	XNS-48	—	S-46
A24MCKNR5	A24MCKNL5	CNMG543	1.500	14.000	.890	12°	1.760	ICSN-533	NL-58	CL-12	XNS-510	—	S-58

A-MCL

Solid steel bar with coolant hole

**OPTIONAL
HARDWARE**

Sumitomo Cat. No.			D	C	F	K°	Min. Bore						
Right Hand	Left Hand	Gage Insert											
A16MCLNR3	A16MCLNL3	CNMG322	1.000	12.000	.640	14°	1.200	N/A	NL-33	CL-7	XNS-36	—	—
A16MCLNR4	A16MCLNL4	CNMG432	1.000	12.000	.640	14°	1.200	N/A	NL-44	CL-20	XNS-48	—	—
A20MCLNR4	A20MCLNL4	CNMG432	1.250	12.000	.765	14°	1.470	ICSN-433	NL-46	CL-20	XNS-48	—	S-46
A24MCLNR4	A24MCLNL4	CNMG432	1.500	14.000	.890	14°	1.760	ICSN-433	NL-46	CL-20	XNS-48	—	S-46
A28MCLNR4	A28MCLNL4	CNMG432	1.750	14.000	1.015	12°	2.010	ICSN-433	NL-46	CL-20	XNS-48	—	S-46
A32MCLNR4	A32MCLNL4	CNMG432	2.000	14.000	1.281	12°	2.400	ICSN-433	NL-46	CL-20	XNS-48	—	S-46
A32MCLNR5	A32MCLNL5	CNMG543	2.000	16.000	1.281	12°	2.400	ICSN-533	NL-58	CL-12	XNS-510	—	S-58
A40MCLNR4	A40MCLNL4	CNMG432	2.500	16.000	1.531	10°	3.030	ICSN-433	NL-46	CL-20	XNS-48	—	S-46

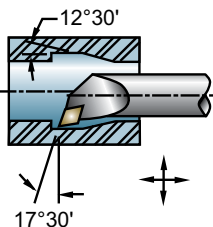
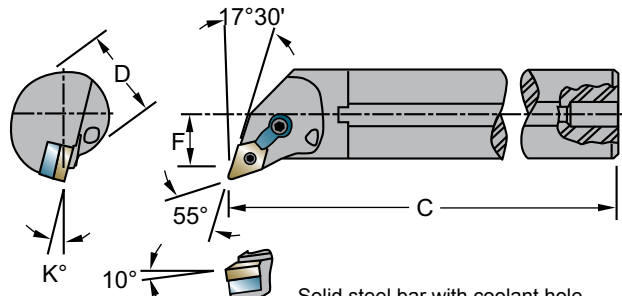


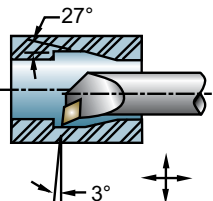
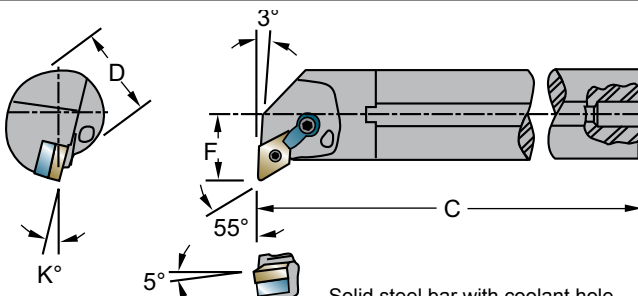
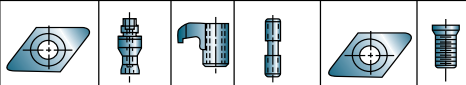
ANSI Standard Combination Boring Bars with through coolant

ANSI STANDARD COMBINATION

BORING BARS

Series: A-MDQ • A-MDU

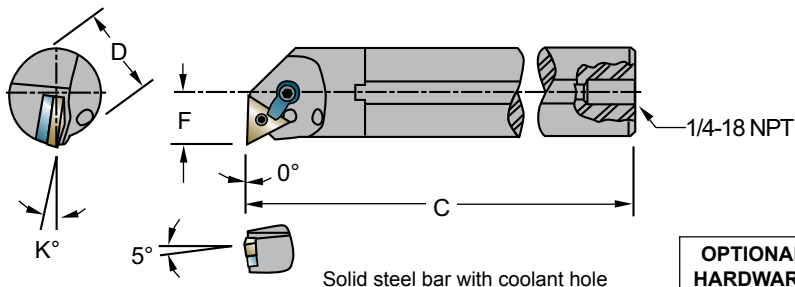
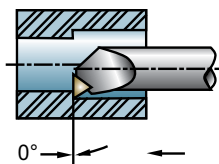
A-MDQ			 							OPTIONAL HARDWARE			
Sumitomo Cat. No.			D	C	F	K°	Min. Bore						
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim	Shim Screw
A20MDQNR4	A20MDQNL4	DNMG432	1.250	14.000	1.000	12°	1.705	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46
A24MDQNR4	A24MDQNL4	DNMG432	1.500	14.000	1.125	8°	2.000	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46

A-MDU			  OPTIONAL HARDWARE 										
Sumitomo Cat. No.			D	C	F	K°	Min. Bore						
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim	Shim Screw
A16MDUNR3	A16MDUNL3	DNMG332	1.000	12.000	.750	12°	1.300	N/A	NL-33	CL-7	XNS-36	—	S-34
A20MDUNR4	A20MDUNL4	DNMG432	1.250	14.000	1.000	10°	1.705	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46
A24MDUNR4	A24MDUNL4	DNMG432	1.500	14.000	1.250	10°	2.000	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46
A28MDUNR4	A28MDUNL4	DNMG432	1.750	14.000	1.250	10°	2.250	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46
A32MDUNR4	A32MDUNL4	DNMG432	2.000	16.000	1.375	10°	2.500	IDSN-443	NL-46L	CL-12	XNS-59	IDSN-433	S-46
A40MDUNR5	A40MDUNL5	DNMG543	2.500	16.000	1.750	10°	3.250	IDSN-533	NL-58	CL-30	XNS-510	—	S-58

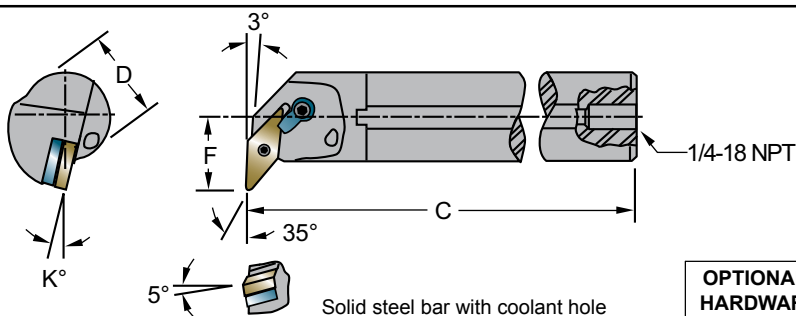
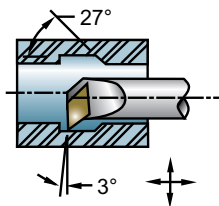


Select ANSI Standard Combination Boring Bars with through coolant, for longer insert life and excellent chip evacuation.



A-MTF**OPTIONAL
HARDWARE**

Sumitomo Cat. No.		Gage Insert	D	C	F	K°	Min. Bore	OPTIONAL HARDWARE					
Right Hand	Left Hand							Shim	Lock Pin	Clamp	Clamp Screw	Shim	Shim Screw
A16MTFNR3	A16MTFNL3	TNMG332	1.000	12.000	.640	15°	1.200	ITSN-333	NL-34L	CL-7	XNS-35	ITSN-323	S-34
A20MTFNR3	A20MTFNL3	TNMG332	1.250	12.000	.765	12°	1.470	ITSN-333	NL-34L	CL-7	XNS-35	ITSN-323	S-34
A24MTFNR3	A24MTFNL3	TNMG332	1.500	14.000	.890	10°	1.760	ITSN-333	NL-34L	CL-7	XNS-35	ITSN-323	S-34
A24MTFNR4	A24MTFNL4	TNMG432	1.500	14.000	1.030	10°	1.760	ITSN-432	NL-46	CL-9	XNS-59	ITSN-423	S-46
A32MTFNR4	A32MTFNL4	TNMG432	2.000	14.000	1.281	8°	2.400	ITSN-432	NL-46	CL-9	XNS-59	ITSN-423	S-46

A-MVU**OPTIONAL
HARDWARE**

Sumitomo Cat. No.		Gage Insert	D	C	F	K°	Min. Bore	OPTIONAL HARDWARE					
Right Hand	Left Hand							Shim	Lock Pin	Clamp	Clamp Screw	Shim	Shim Screw
A20MVUNR3	A20MVUNL3	VNMG332	1.250	14.000	1.125	12°	1.705	IVSN-322	NL-34L	CL-12	XNS-58	—	S-34
A24MVUNR3	A24MVUNL3	VNMG332	1.500	14.000	1.250	12°	2.000	IVSN-322	NL-34L	CL-12	XNS-58	—	S-34

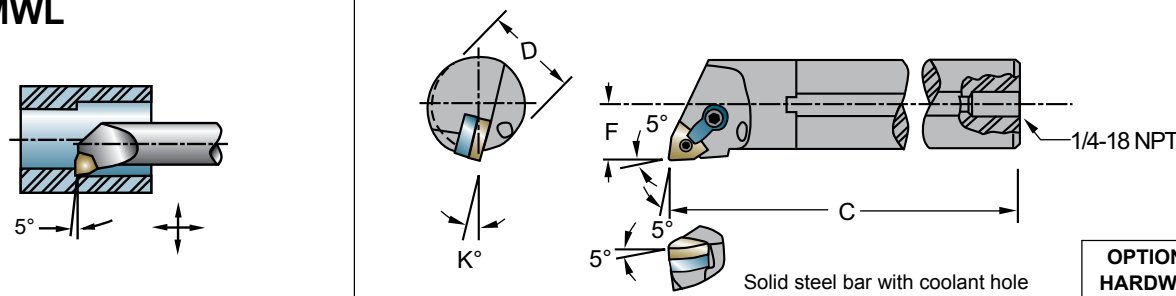


ANSI Standard Combination Boring Bars with through coolant

ANSI STANDARD COMBINATION

BORING BARS

Series: A-MWL

A-MWL													OPTIONAL HARDWARE	
Sumitomo Cat. No.			D	C	F	K°	Min. Bore							
Right Hand	Left Hand	Gage Insert						Shim	Lock Pin	Clamp	Clamp Screw	Shim	Shim Screw	
A12MWLNR3	A12MWLNL3	WNMG332	.750	10.000	.500	14°	1.000	—	NL-33L	CL-7	XNS-36	—	—	
A16MWLNR3	A16MWLNL3	WNMG332	1.000	12.000	.640	14°	1.200	—	NL-33	CL-7	XNS-36	—	—	
A16MWLNR4	A16MWLNL4	WNMG432	1.000	12.000	.640	14°	1.200	—	NL-44	CL-20	XNS-47	—	—	
A20MWLNR4	A20MWLNL4	WNMG432	1.250	12.000	.765	14°	1.470	IWSN-432	NL-46	CL-20	XNS-48	—	—	
A24MWLNR4	A24MWLNL4	WNMG432	1.500	14.000	.890	14°	1.760	IWSN-432	NL-46	CL-20	XNS-48	—	—	

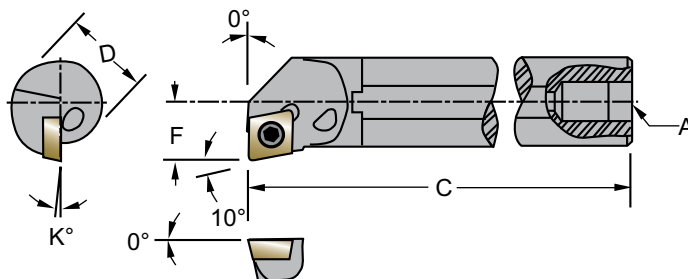
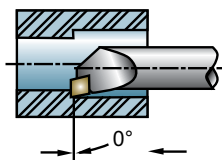


ANSI-ISO BORING BARS

Series: A-SCFP • A-SCLC

ANSI-ISO Boring Bars with through coolant

A-SCFP

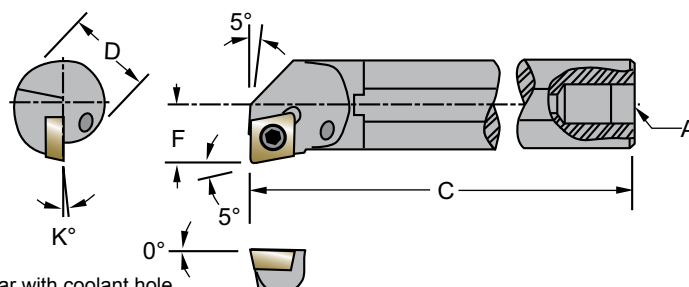
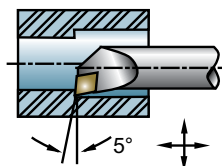


Solid steel bar with coolant hole

Sumitomo Cat. No.		11° Positive Gage Insert	D	C	F	K°	Min. Bore	A	Insert Screw	Torx Wrench
Right Hand	Left Hand									
A06SCFPR2	A06SCFPL2	CPMT21.51	.375	6.000	.250	4°	.480	1/8*	ST21.5	TRX08
A08SCFPR2	A08SCFPL2	CPMT21.51	.500	8.000	.312	2°	.600	1/16-27 NPT	ST21.5	TRX08
A10SCFPR2	A10SCFPL2	CPMT21.51	.625	10.000	.406	0°	.770	1/8-27 NPT	ST21.5	TRX08
A12SCFPR3	A12SCFPL3	CPMT32.52	.750	10.000	.500	0°	.930	1/8-27 NPT	ST32.5	TRX15
A16SCFPR3	A16SCFPR3	CPMT32.52	1.000	12.000	.640	0°	1.200	1/4-18 NPT	ST32.5	TRX15

*Through hole only. No threads.

A-SCLC



Solid steel bar with coolant hole

Sumitomo Cat. No.		7° Positive Gage Insert	D	C	F	K°	Min. Bore	A	Insert Screw	Torx Wrench
Right Hand	Left Hand									
A06SCLCR2	A06SCLCL2	CCMT21.51	.375	6.000	.250	-15°	.480	1/8*	ST21.5	TRX08
A08SCLCR2	A08SCLCL2	CCMT21.51	.500	6.000	.312	-13°	.600	1/16-27 NPT	ST21.5	TRX08
A10SCLCR2	A10SCLCL2	CCMT21.51	.625	10.000	.406	-10°	.770	1/8-27 NPT	ST21.5	TRX08
A10SCLCR3	A10SCLCL3	CCMT32.52	.625	10.000	.406	-10°	.770	1/8-27 NPT	ST32.5	TRX15
A12SCLCR3	A12SCLCL3	CCMT32.52	.750	10.000	.500	-8°	.930	1/8-27 NPT	ST32.5	TRX15
A16SCLCR3	A16SCLCL3	CCMT32.52	1.000	12.000	.640	-7°	1.200	1/4-18 NPT	ST32.5	TRX15

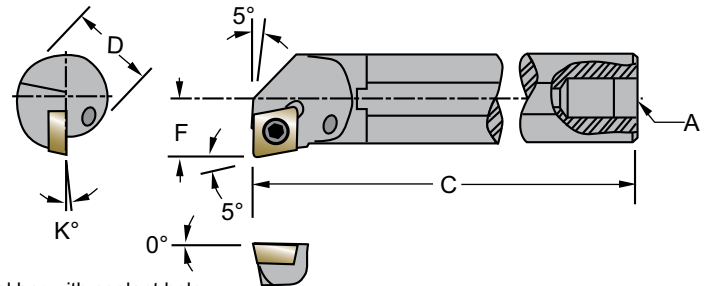
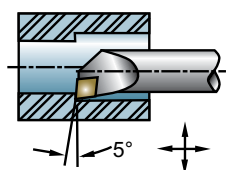
*Through hole only. No threads.



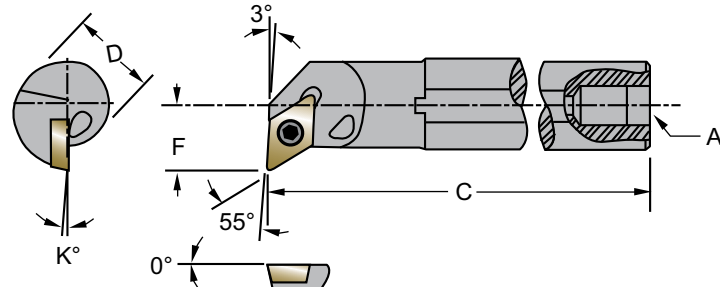
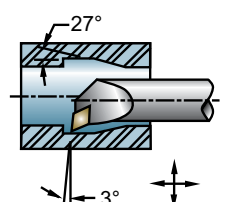
ANSI-ISO Boring Bars with through coolant

ANSI-ISO BORING BARS

Series: A-SCLP • A-SDUP

A-SCLP										
			Solid steel bar with coolant hole							
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand									
A06SCLPR2	A06SCLPL2	CPMT21.51	.375	6.000	.250	-6°	.480	1/8*	ST21.5	TRX08
A08SCLPR2	A08SCLPL2	CPMT21.51	.500	8.000	.312	-3°	.600	1/16-27 NPT	ST21.5	TRX08
A10SCLPR2	A10SCLPL2	CPMT21.51	.625	10.000	.406	-2°	.770	1/8-27 NPT	ST21.5	TRX08
A10SCLPR3	A10SCLPL3	CPMT32.52	.625	10.000	.406	-2°	.770	1/8-27 NPT	ST32.5	TRX15
A12SCLPR3	A12SCLPL3	CPMT32.52	.750	10.000	.500	-2°	.930	1/8-27 NPT	ST32.5	TRX15
A16SCLPR3	A16SCLPL3	CPMT32.52	1.000	12.000	.640	0°	1.200	1/4-18 NPT	ST32.5	TRX15

*Through hole only. No threads.

A-SDUP										
			Solid steel bar with coolant hole							
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right hand	Left Hand									
A06SDUPR2	A06SDUPL2	DPMT21.51	.375	6.000	.375	-3°	.600	1/8*	ST21.5	TRX08
A08SDUPR2	A08SDUPL2	DPMT21.51	.500	8.000	.437	-2°	.730	1/16-27NPT	ST21.5	TRX08
A10SDUPR2	A10SDUPL2	DPMT21.51	.625	10.000	.500	0°	.850	1/8-27NPT	ST21.5	TRX08
A12SDUPR3	A12SDUPL3	DPMT32.52	.750	10.000	.562	0°	.980	1/8-27NPT	ST32.5	TRX15
A16SDUPR3	A16SDUPL3	DPMT32.52	1.000	12.000	.750	0°	1.300	1/4-18NPT	ST32.5	TRX15

*Through hole only. No threads.

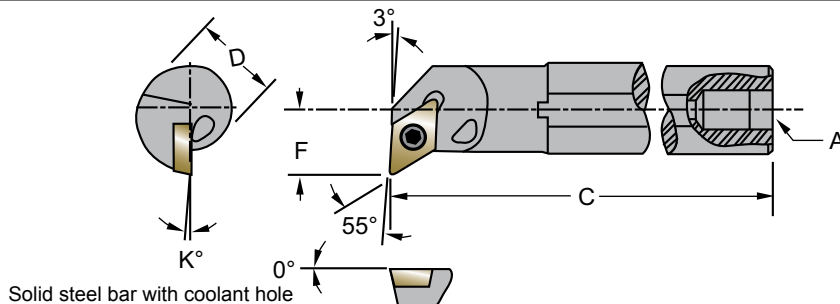
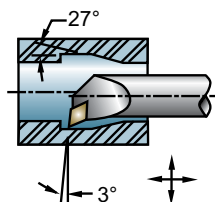


ANSI-ISO BORING BARS

Series: A-SDUC • A-SDXP

ANSI-ISO Boring Bars with through coolant

A-SDUC

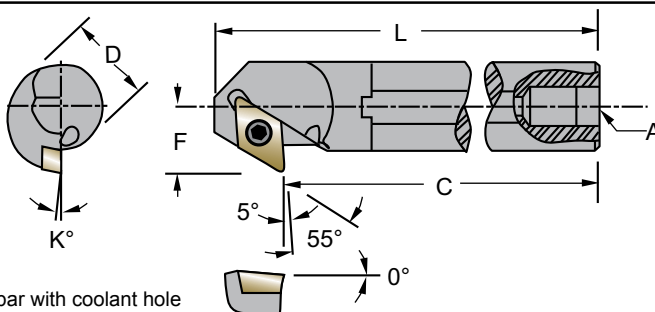
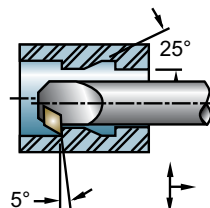


Solid steel bar with coolant hole

Sumitomo Cat. No.		7° Positive Gage Insert	D	C	F	K°	Min. Bore	A	Insert Screw	Torx Wrench
Right Hand	Left Hand									
A06SDUCR2	A06SDUCL2	DCMT21.51	.375	6.000	.375	-7°	.600	1/8*	ST21.5	TRX08
A08SDUCR2	A08SDUCL2	DCMT21.51	.500	6.000	.437	-7°	.730	1/16-27 NPT	ST21.5	TRX08
A10SDUCR2	A10SDUCL2	DCMT21.51	.625	8.000	.500	-7°	.850	1/8-27 NPT	ST21.5	TRX08
A12SDUCR3	A12SDUCL3	DCMT32.52	.750	10.000	.562	-7°	.980	1/8-27 NPT	ST32.5	TRX15
A16SDUCR3	A16SDUCL3	DCMT32.52	1.000	12.000	.750	-5°	1.300	1/4-18 NPT	ST32.5	TRX15

*Through hole only. No threads.

A-SDXP



Solid steel bar with coolant hole

Sumitomo Cat. No.		11° Positive Gage Insert	D	C	F	L	K°	Min. Bore	A	Insert Screw	Torx Wrench
Right Hand	Left Hand										
A08SDXPR2	A08SDXPL2	DPMT21.51	.500	8.000	.437	8-1/2	0°	.730	1/16-27 NPT	ST21.5	TRX08
A10SDXPR2	A10SDXPL2	DPMT21.51	.625	10.000	.500	10-1/2	0°	.850	1/8-27 NPT	ST21.5	TRX08
A12SDXPR3	A12SDXPL3	DPMT32.52	.750	10.000	.562	10-3/4	-2°	.980	1/8-27 NPT	ST32.5	TRX15
A16SDXPR3	A16SDXPL3	DPMT32.52	1.000	12.000	.750	12-3/4	0°	1.300	1/4-18 NPT	ST32.5	TRX15



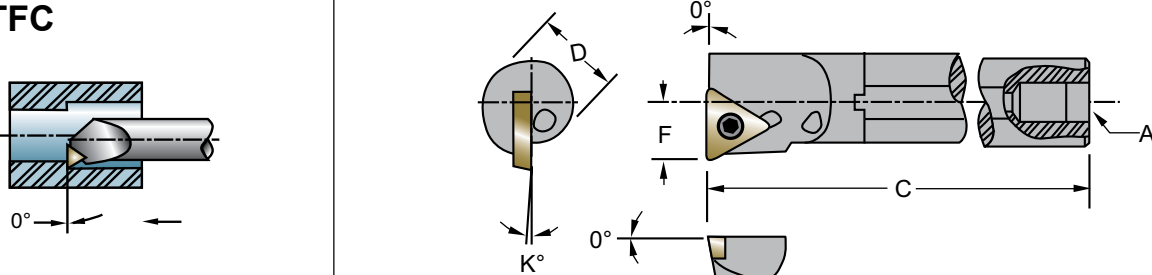
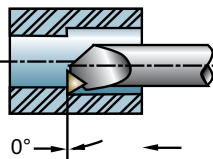
Do not exceed a 3:1 boring bar diameter to overhang ratio: 1" dia. bar = 3" maximum overhang. This will provide maximum rigidity and minimal chatter for steel shank bars.

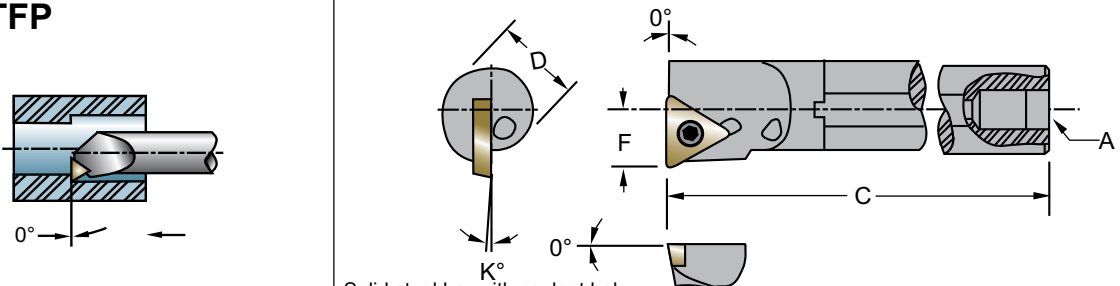
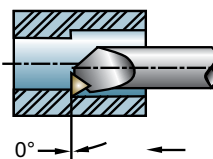


ANSI-ISO Boring Bars with through coolant

ANSI-ISO BORING BARS

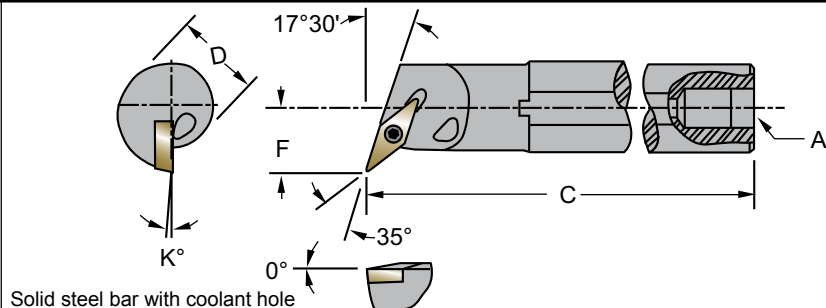
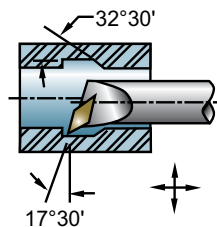
Series: A-STFC • A-STFP

A-STFC										
			Solid steel bar with coolant hole							
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	7° Positive Gage Insert							Insert Screw	Torx Wrench
A08STFCR2	A08STFCL2	TCMT21.51	.500	6.000	.312	-13°	.600	1/16-27 NPT	ST21.5	TRX08
A10STFCR2	A10STFCL2	TCMT21.51	.625	8.000	.406	-10°	.770	1/8-27 NPT	ST21.5	TRX08
A12STFCR3	A12STFCL3	TCMT32.52	.750	10.000	.500	-8°	.930	1/8-27 NPT	ST32.5	TRX15
A16STFCR3	A16STFCL3	TCMT32.52	1.000	12.000	.640	-7°	1.200	1/4-18 NPT	ST32.5	TRX15

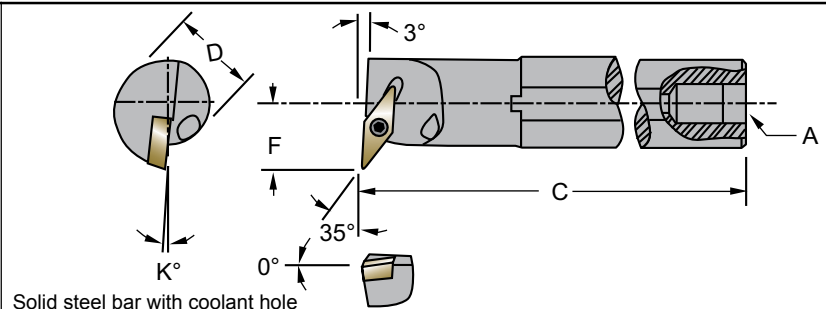
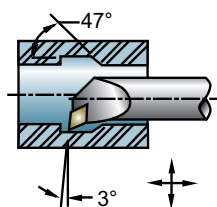
A-STFP										
			Solid steel bar with coolant hole							
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	11° Positive Gage Insert							Insert Screw	Torx Wrench
A05STFPR1.8	A05STFPL1.8	TPMT1.81.51	.3125	5.000	.219	-8°	.415	3/32*	ST21.5	TRX08
A06STFPR2	A06STFPL2	TPMT21.51	.375	6.000	.250	-4°	.480	1/8*	ST21.5	TRX08
A08STFPR2	A08STFPL2	TPMT21.51	.500	8.000	.312	-2°	.600	1/16-27 NPT	ST21.5	TRX08
A10STFPR2	A10STFPL2	TPMT21.51	.625	10.000	.406	0°	.770	1/8-27 NPT	ST21.5	TRX08
A12STFPR3	A12STFPL3	TPMT32.52	.750	10.000	.500	-2°	.930	1/8-27 NPT	ST32.5	TRX15
A16STFPR3	A16STFPL3	TPMT32.52	1.000	12.000	.640	0°	1.200	1/4-18 NPT	ST32.5	TRX15

*Through hole only. No threads.



A-SVQB

Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	5° Positive Gage Insert								
A10SVQBR2	A10SVQBL2	VBMT221	.625	10.000	.500	-6°	.850	1/8-27 NPT	ST21.5	TRX08
A12SVQBR2	A12SVQBL2	VBMT221	.750	10.000	.562	-5°	.980	1/8-27 NPT	ST21.5	TRX08
A16SVQBR3	A16SVQBL3	VBMT332	1.000	12.000	.750	-5°	1.300	1/4-18 NPT	ST32.5	TRX15

A-SVUB

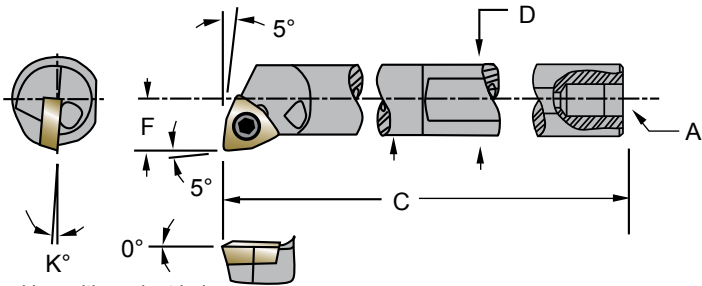
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	5° Positive Gage Insert								
A12SVUBR2	A12SVUBL2	VBMT221	.750	10.000	.562	-6°	.980	1/8-27 NPT	ST21.5	TRX08
A16SVUBR3	A16SVUBL3	VBMT332	1.000	12.000	.750	-6°	1.300	1/4-18 NPT	ST32.5	TRX15
A20SVUBR3	A20SVUBL3	VBMT332	1.250	14.000	1.000	-6°	2.000	1/4-18 NPT	ST32.5	TRX15
A24SVUBR3	A24SVUBL3	VBMT332	1.500	14.000	1.250	-6°	2.250	1/4-18 NPT	ST32.5	TRX15

ANSI-ISO & ISO ANSI Carbide Shank Boring Bars with through coolant

ANSI-ISO & ISO-ANSI CARBIDE SHANK

BORING BARS

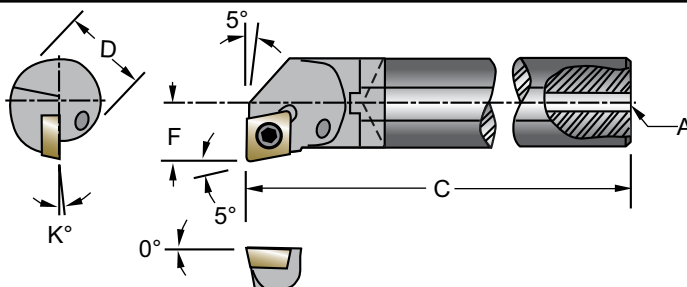
Series: A-SWLP • E-SCLC

A-SWLP											
Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A			
Right Hand	Left Hand	11° Positive Gage Insert									
A06SWLPR2	A06SWLPL2	WPMT21.51	.375	6.000	.250	-5°	.480	1/8*	ST21.5	TRX08	
A08SWLPR2	A08SWLPL2	WPMT21.51	.500	8.000	.312	-2°	.600	1/16-27 NPT	ST21.5	TRX08	
A10SWLPR2	A10SWLPL2	WPMT21.51	.625	10.000	.406	-3°	.770	1/8-27 NPT	ST21.5	TRX08	

*Through hole only. No threads.

ISO-ANSI CARBIDE SHANK BORING BARS

E-SCLC



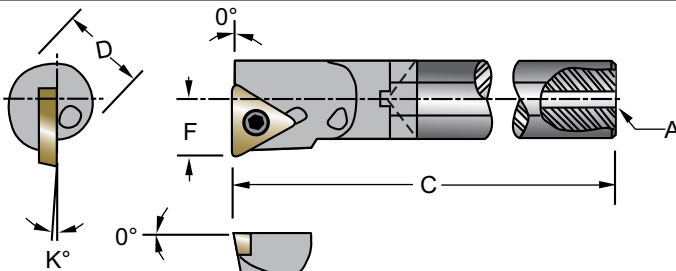
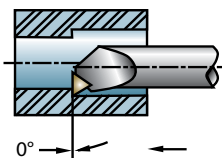
Sumitomo Cat. No.				D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	7° Positive Gage Insert									
E06SCLCR2	E06SCLCL2	CCMT21.51	.375	6.000	.250	-15°	.480	.093*	ST21.5	TRX08	
E08SCLCR2	E08SCLCL2	CCMT21.51	.500	6.000	.312	-13°	.600	.093*	ST21.5	TRX08	
E10SCLCR3	E10SCLCL3	CCMT32.52	.625	8.000	.406	-10°	.770	.125*	ST32.5	TRX15	
E12SCLCR3	E12SCLCL3	CCMT32.52	.750	10.000	.500	-8°	.930	.142*	ST32.5	TRX15	
E16SCLCR3	E16SCLCL3	CCMT32.52	1.000	12.000	.640	-7°	1.200	.193*	ST32.5	TRX15	

*Through hole only. No threads.



BORING BARS

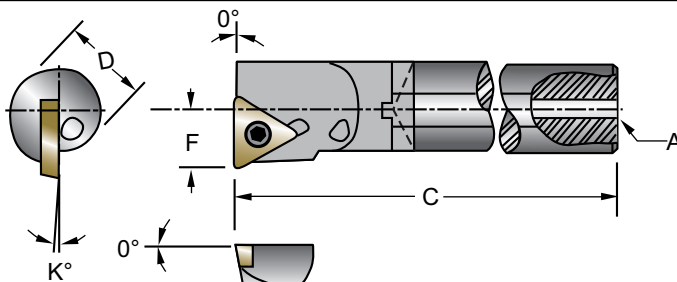
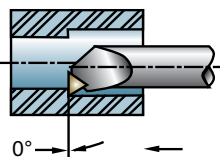
Series: E-STFP • E-STFC

ANSI-ISO Carbide Shank Boring Bars
with through coolant**E-STFP**

Solid carbide bar with fixed steel head and coolant hole

Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	11° Positive Gage Insert								
E05STFPR1.8	E05STFPL1.8	TPMT1.81.51	.3125	5.000	.219	-8°	.415	.062	ST21.5	TRX08

*Through hole only. No threads.

E-STFC

Solid carbide bar with fixed steel head and coolant hole

Sumitomo Cat. No.			D	C	F	K°	Min. Bore	A		
Right Hand	Left Hand	7° Positive Gage Insert								
E06STFCR2	E06STFCL2	TCMT21.51	.375	6.000	.250	-15°	.480	.093*	ST21.5	TRX08
E08STFCR2	E08STFCL2	TCMT21.51	.500	6.000	.312	-13°	.600	.093*	ST21.5	TRX08
E10STFCR2	E10STFCL2	TCMT21.51	.625	8.000	.406	-10°	.770	.125*	ST21.5	TRX08
E12STFCR3	E12STFCL3	TCMT32.52	.750	10.000	.500	-8°	.930	.142*	ST32.5	TRX15
E16STFCR3	E16STFCL3	TCMT32.52	1.000	12.000	.640	-7°	1.200	.193*	ST32.5	TRX15

*Through hole only. No threads.



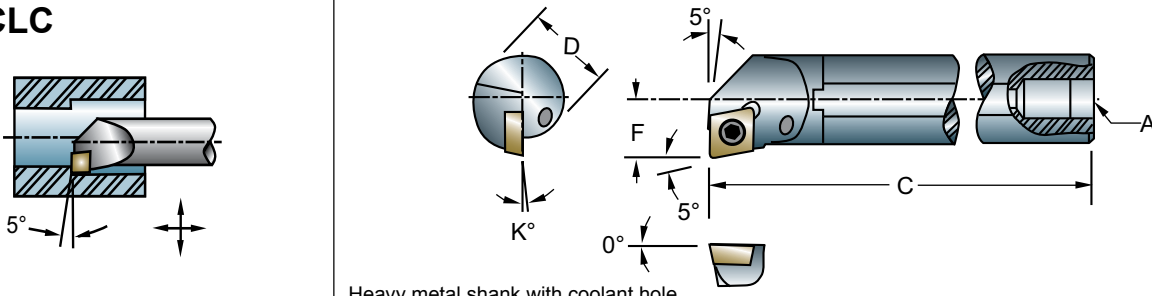
For applications requiring larger overhangs—5:1 ratios—select carbide bars with through coolant shanks.

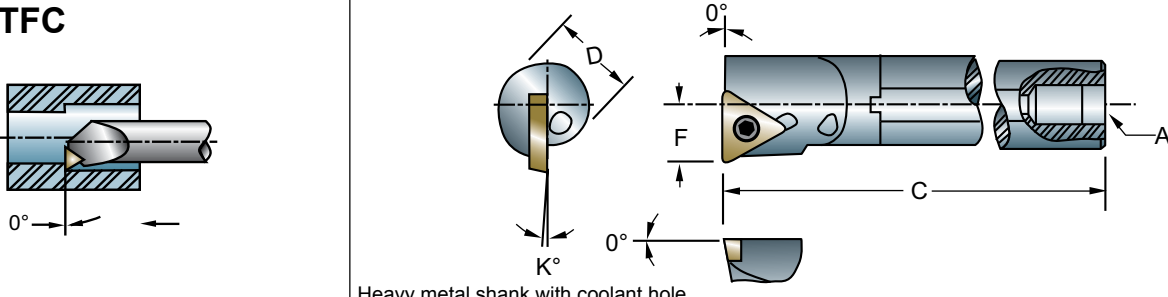


ANSI-ISO Heavy Metal Shank Boring Bars with through coolant

ANSI-ISO HEAVY METAL SHANK BORING BARS

Series: J-SCLC • J-STFC

J-SCLC										
Sumitomo Cat. No.										
Right Hand	Left Hand	7° Positive Gage Insert	D	C	F	K°	Min. Bore	A	Insert Screw	Torx Wrench
J08SCLCR2	J08SCLCL2	CCMT21.51	.500	6.000	.312	-13°	.600	1/16-27 NPT	ST21.5	TRX08
J10SCLCR3	J10SCLCL3	CCMT32.52	.625	8.000	.406	-10°	.770	1/8-27 NPT	ST32.5	TRX15
J12SCLCR3	J12SCLCL3	CCMT32.52	.750	10.000	.500	-8°	.930	1/8-27 NPT	ST32.5	TRX15
J16SCLCR3	J16SCLCL3	CCMT32.52	1.000	12.000	.640	-7°	1.200	1/4-18 NPT	ST32.5	TRX15

J-STFC										
Sumitomo Cat. No.										
Right Hand	Left Hand	7° Positive Gage Insert	D	C	F	K°	Min. Bore	A	Insert Screw	Torx Wrench
J06STFCR2	J06STFCL2	TCMT21.51	.375	6.000	.250	-15°	.480	1/8"	ST21.5	TRX08
J08STFCR2	J08STFCL2	TCMT21.51	.500	6.000	.312	-13°	.600	1/16-27 NPT	ST21.5	TRX08
J10STFCR2	J10STFCL2	TCMT21.51	.625	8.000	.406	-10°	.770	1/8-27 NPT	ST21.5	TRX08
J12STFCR3	J12STFCL3	TCMT32.52	.750	10.000	.500	-8°	.930	1/8-27 NPT	ST32.5	TRX15
J16STFCR3	J16STFCL3	TCMT32.52	1.000	12.000	.640	-7°	1.200	1/4-18 NPT	ST32.5	TRX15

*Through hole only. No threads.

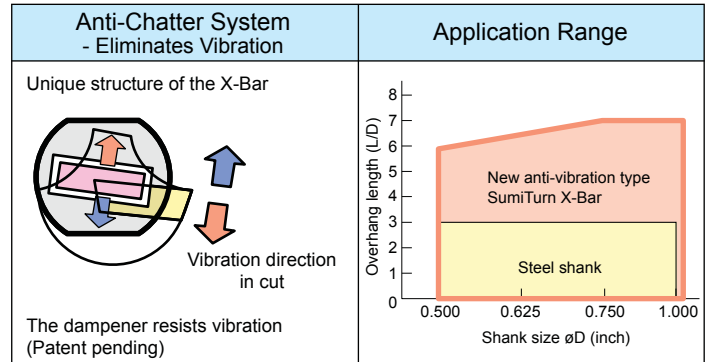
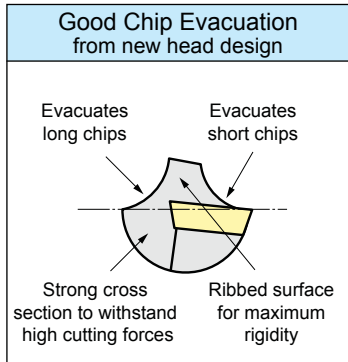


■ Features & Benefits

- Special dampener mechanism eliminates chatter.
- Up to 6X L/D overhang (depth / bar diameter).
- Cost effective solution to carbide bars when deep hole boring.
- Available in both coolant-through and non-coolant-through
- Effectively rough bores deep holes.
- **NEW** negative X-Bars now available.
- Positive X-Bar expansion now includes bars for CC--, CP--, DC--, TC--, TP--, and VB-- style inserts.



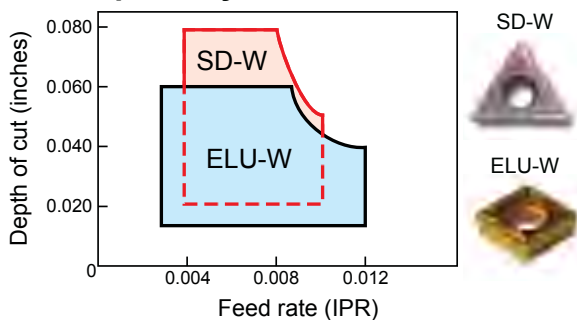
■ X-BAR Technical Information



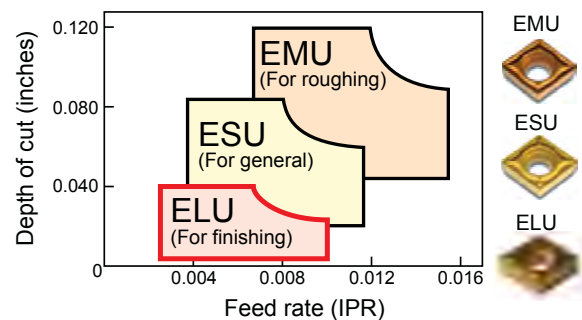
■ Recommended Overhang Length / Shank Diameter (L/D)

Chipbreakers	Type of Boring Bar	Overhang Length (L/D)						
		1	2	3	4	5	6	7
ELU, ESU, EMU (M class inserts) 	Steel shank							
								
ELU-W, SD-W ("Wiper" style inserts) 	Steel shank							
								

● "Wiper" Style Positive Inserts



● M Class Positive Inserts





■ SumiTurn X-Bar Availability-POSITIVE

D-SCLC									
Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D08RSCLCR2	D08RSCLCL2	0.600"	0.500"	8"	0.300"	-10°	CC-21.5	BFTX02506N	TRX08
D10SSCLCR3	D10SSCLCL3	0.770"	0.625"	10"	0.385"	-8°	CC-32.5	BFTX0407N	TRX15
D12SSCLCR3	D12SSCLCL3	0.930"	0.750"	10"	0.465"	-7°	CC-32.5	BFTX0409N	TRX15
D16TSCLCR3	D16TSCLCL3	1.200"	1.000"	12"	0.600"	-6°	CC-32.5	BFTX0409N	TRX15

D-SCLP									
Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D10SSCLPR2	D10SSCLPL2	0.770"	0.625"	10"	0.355"	-5°	CP-21.5	BFTX0256N	TRX08
D12SSCLPR3	D12SSCLPL3	0.930"	0.750"	10"	0.450"	-4°	CP-32.5	BFTX0409N	TRX15
D16TSCLPR3	D16TSCLPL3	1.200"	1.000"	12"	0.550"	-2°	CP-32.5	BFTX0409N	TRX15

D/B-SDQC									
Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
*B06RSDQCR2	*B06RSDQCL2	0.480"	0.375"	8"	0.276"	-8°	DC-21.5	BFTX02506N	TRX08
D08RSDQCR2	D08RSDQCL2	0.600"	0.500"	8"	0.310"	-8°	DC-21.5	BFTX02506N	TRX08
D10SSDQCR2	D10SSDQCL2	0.770"	0.625"	10"	0.430"	-6°	DC-21.5	BFTX02506N	TRX08
D12SSDQCR3	D12SSDQCL3	0.980"	0.750"	10"	0.510"	-6°	DC-32.5	BFTX0409N	TRX15
D16TSDQCR3	D16TSDQCL3	1.250"	1.000"	12"	0.670"	-6°	DC-32.5	BFTX0409N	TRX15

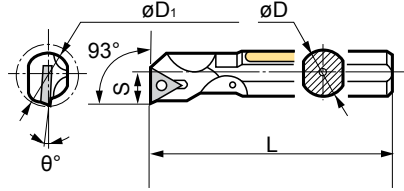
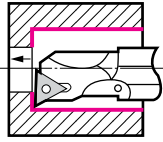
*Non-coolant through

D/B-SDUC									
Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
*B06RSDUCR2	*B06RSDUCL2	0.600"	0.375"	8"	0.276"	-8°	DC-21.5	BFTX02506N	TRX08
D08RSDUCR2	D08RSDUCL2	0.730"	0.500"	8"	0.360"	-8°	DC-21.5	BFTX02506N	TRX08
D10SSDUCR2	D10SSDUCL2	0.850"	0.625"	10"	0.430"	-6°	DC-21.5	BFTX02506N	TRX08
D12SSDUCR3	D12SSDUCL3	0.980"	0.750"	10"	0.510"	-6°	DC-32.5	BFTX0409N	TRX15
D16TSDUCR3	D16TSDUCL3	1.300"	1.000"	12"	0.670"	-6°	DC-32.5	BFTX0409N	TRX15

*Non-coolant through

*Non-coolant through

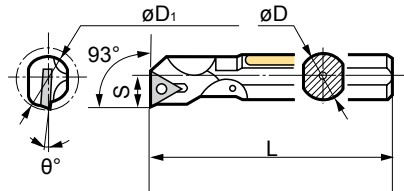
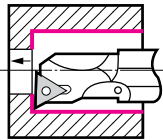
D-STUC



GAGE INSERT
TC□□

Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D08RSTUCR2	D08RSTUCL2	0.600"	0.500"	8"	0.300"	-10°	TC-21.5	BFTX02506N	TRX08
D10SSTUCR2	D10SSTUCL2	0.770"	0.625"	10"	0.385"	-8°	TC-21.5	BFTX02506N	TRX08
D12SSTUCR3	D12SSTUCL3	0.930"	0.750"	10"	0.465"	-7°	TC-32.5	BFTX0409N	TRX15
D16TSTUCR3	D16TSTUCL3	1.200"	1.000"	12"	0.600"	-6°	TC-32.5	BFTX0409N	TRX15

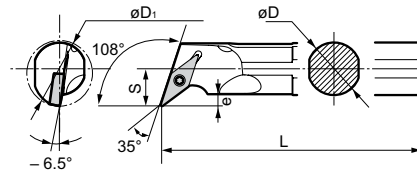
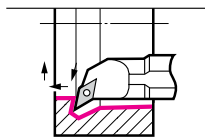
D-STUP



GAGE INSERT
TP□□

Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D08RSTUPR2	D08RSTUPL2	0.600"	0.500"	8"	0.300"	-7°	TP-22	BFTX0306A	TRX10
D10SSTUPR2	D10SSTUPL2	0.770"	0.625"	10"	0.385"	-4°	TP-22	BFTX0306A	TRX10
D12SSTUPR2	D12SSTUPL2	0.930"	0.750"	10"	0.465"	-2°	TP-22	BFTX0307A	TRX10
D16TSTUPR3	D16TSTUPL3	1.200"	1.000"	12"	0.600"	-2°	TP-33	BFTX0410A	TRX15

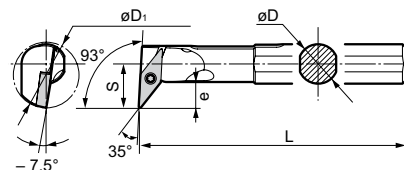
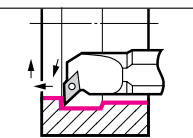
D-SVQB



GAGE INSERT
VB□□

Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D10SSVQBR2	D10SSVQBL2	0.850"	0.625"	10"	0.500"	-6.5°	VB-22	BFTX02506N	TRX08
D12SSVQBR2	D12SSVQBL2	0.980"	0.750"	10"	0.562"	-6.5°	VB-22	BFTX02506N	TRX08

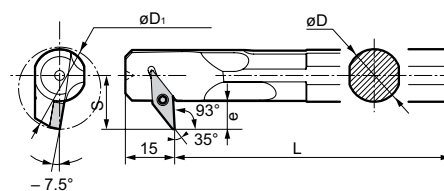
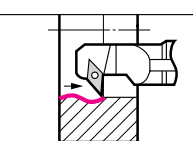
D-SVUB



GAGE INSERT
VB□□

Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D08SSVUBR2	D08SSVUBL2	0.850"	0.500"	8"	0.500"	-7.5°	VB-22	BFTX02506N	TRX08
D10SSVUBR2	D10SSVUBL2	0.980"	0.625"	10"	0.562"	-7.5°	VB-22	BFTX02506N	TRX08

D-SVZB



GAGE INSERT
VB□□

Sumitomo Cat. No.		Dimensions					Gage Insert	Hardware	
Right Hand	Left Hand	Min. Bore	D	L	S	θ°		Screw	Wrench
D08RSVZBR2	D08RSVZBL2	0.800"	0.500"	8"	0.532"	-7.5°	VB-22	BFTX02506N	TRX08
D10SSVZBR2	D10SSVZBL2	1.000"	0.625"	10"	0.650"	-7.5°	VB-22	BFTX02506N	TRX08

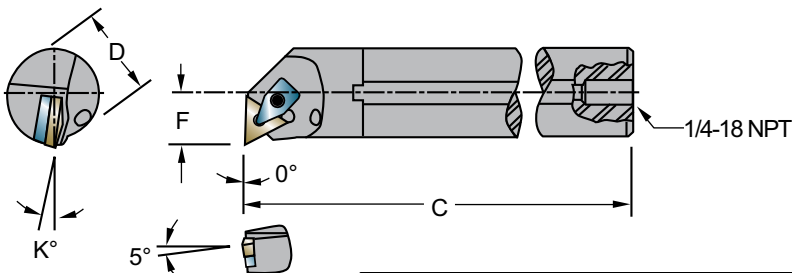
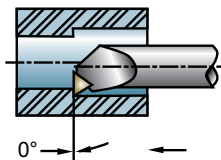
SumiTurn X-Bar Availability-NEGATIVE

D-DCLN								Hardware	
Sumitomo Cat. No.			D	C	F	K°	Min. Bore		
Right Hand	Left Hand	Gage Insert							
D16TDCLNR4	D16TDCLNL4	CNMG432	1.000	12"	0.640	14°	1.250"	SCP-1	LH040/LH025
D20TDCLNR4	D20TDCLNL4	CNMG432	1.250	12"	0.765	14°	1.470"		
D24TDCLNR4	D24TDCLNL4	CNMG432	1.500	12"	0.890	14°	1.760"		

D-DDQN								Hardware	
Sumitomo Cat. No.			D	C	F	K°	Min. Bore		
Right Hand	Left Hand	Gage Insert							
D20TDDQNR4	D20TDDQNL4	DNMG432	1.250	12"	1.000	12°	1.705"	SCP-2	LH040/LH025
D24TDDQNR4	D24TDDQNL4	DNMG432	1.500	12"	1.125	8°	2.000"		

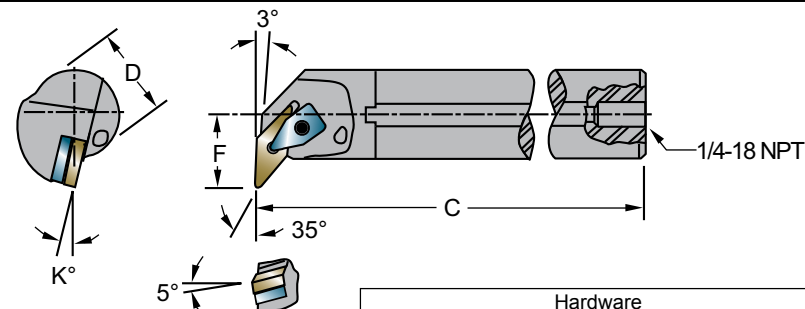
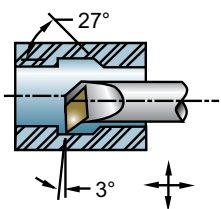
D-DDUN								Hardware	
Sumitomo Cat. No.			D	C	F	K°	Min. Bore		
Right Hand	Left Hand	Gage Insert							
D16TDDUNR4	D16TDDUNL4	DNMG432	1.000	12"	0.750	12°	1.300"	SCP-2	LH040/LH025
D20TDDUNR4	D20TDDUNL4	DNMG432	1.250	12"	1.000	10°	1.705"		
D24TDDUNR4	D24TDDUNL4	DNMG432	1.500	12"	1.250	10°	2.000"		

D-DTFN



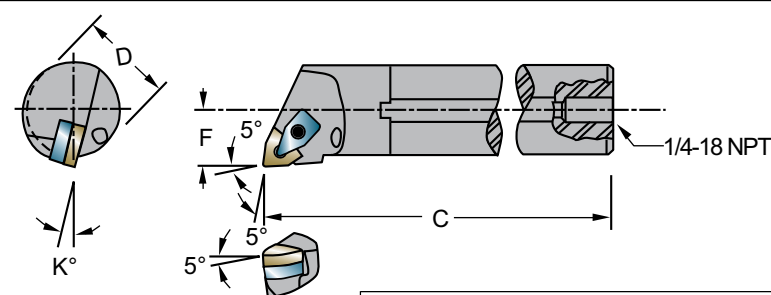
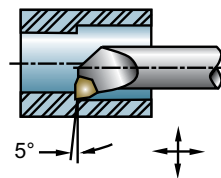
Sumitomo Cat. No.								Hardware	
Right Hand	Left Hand	Gage Insert	D	C	F	K°	Min. Bore	Clamp	Wrench
D16TDTFNR3	D16TDTFNL3	TNMG332	1.000	12"	0.640	15°	1.200"	SCP-1	LH040/LH025
D20TDTFNR3	D20TDTFNL3	TNMG332	1.250	12"	0.765	12°	1.470"		
D24TDTFNR3	D24TDTFNL3	TNMG332	1.500	12"	0.890	10°	1.760"		

D-DVUN



Sumitomo Cat. No.								Hardware	
Right Hand	Left Hand	Gage Insert	D	C	F	K°	Min. Bore	Clamp	Wrench
D20TDVUNR4	D20TDVUNL4	VNMG332	1.250	12"	1.125	12°	2.000"	SCP-2	LH040/LH025
D24TDVUNR4	D24TDVUNL4	VNMG332	1.500	12"	1.250	12°	2.350"		

D-DWLN



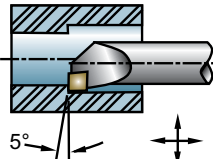
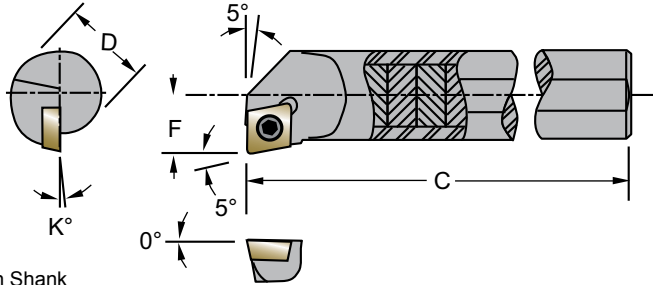
Sumitomo Cat. No.								Hardware	
Right Hand	Left Hand	Gage Insert	D	C	F	K°	Min. Bore	Clamp	Wrench
D16TDWLN4	D16TDWLN4	WNMG432	1.000	12"	0.640	14°	1.325"	SCP-1	LH040/LH025
D20TDWLN4	D20TDWLN4	WNMG432	1.250	12"	0.765	14°	1.470"		
D24TDWLN4	D24TDWLN4	WNMG432	1.500	12"	0.890	14°	1.760"		

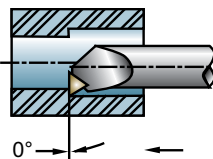
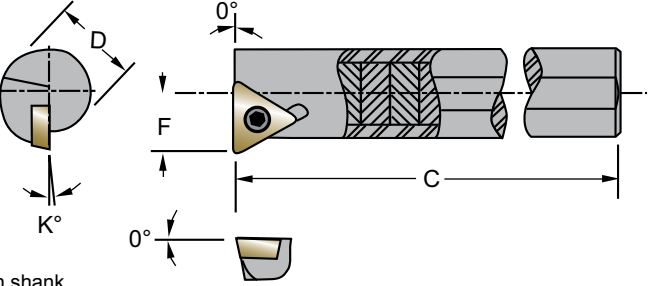
ANSI-ISO Anti Vibration Shank Boring Bars with through coolant

ANSI-ISO ANTI VIBRATION SHANK

BORING BARS

Series: B-SCLC • B-STFC

B-SCLC			 							
Sumitomo Cat. No.										
Right Hand	Left Hand	7° Positive Gage Insert	D	C	C Min. (for shortening)	F	K°	Min. Bore	Insert Screw	Torx Wrench
B10SCLCR3	B10SCLCL3	CCMT32.52	.625	-8.000	5.375	.406	-10°	.770	ST32.5	TRX15
B12SCLCR3	B12SCLCL3	CCMT32.52	.750	-10.000	6.000	.500	-8°	.930	ST32.5	TRX15
B16SCLCR3	B16SCLCL3	CCMT32.52	1.000	-12.000	6.500	.640	-7°	1.200	ST32.5	TRX15

B-STFC			 							
Sumitomo Cat. No.										
Right Hand	Left Hand	7° Positive Gage Insert	D	C	C Min. (for shortening)	F	K°	Min. Bore	Insert Screw	Torx Wrench
B10STFCR2	B10STFCL2	TCMT21.51	.625	-8.000	5.375	.406	-10°	.770	ST21.5	TRX08
B12STFCR3	B12STFCL3	TCMT32.52	.750	-10.000	6.000	.500	-8°	.930	ST32.5	TRX15
B16STFCR3	B16STFCL3	TCMT32.52	1.000	-12.000	6.500	.640	-7°	1.200	ST32.5	TRX15



Always calculate horsepower and thrust requirements before attempting a new application.

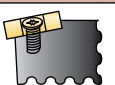
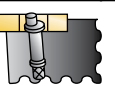


SUMITOMO BORING BAR NOMENCLATURE

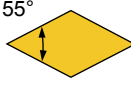
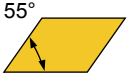
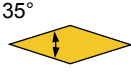
1 Type of Bar

Solid Steel	Solid Carbide
B	C

2 Clamping System

	
C Clamp Lock	M Multiple Lock
	
S Screw Clamp	
	
P Pin Lock	

3 Insert Shape

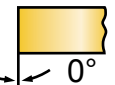
	
S	T
	
C	D
	
K	V
	
W	

4 Bar Style

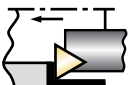
	
L	K
	
F	J
	
Q	H

B	M	T	F	N	R	-	16	4
1	2	3	4	5	6		7	8

5 Rake Angle

	
N	P

6 Hand of Tool

	
R	L

7 Bar Diameter

The two-digit number represents the Bar Diameter in 1/16 of an inch increments.

06 = 3/8	24 = 1 1/2	42 = 2 5/8
08 = 1/2	26 = 1 5/8	44 = 1 3/4
10 = 5/8	28 = 1 3/4	46 = 1 7/8
12 = 3/4	30 = 1 7/8	48 = 3
14 = 7/8	32 = 2	
16 = 1	34 = 2 1/8	
18 = 1 1/8	36 = 2 1/4	
20 = 1 1/4	38 = 2 3/8	
22 = 1 3/8	40 = 2 1/2	

8 Insert I.C. Size

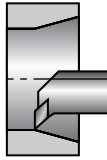
I.C. Size in 1/8 inch increments.

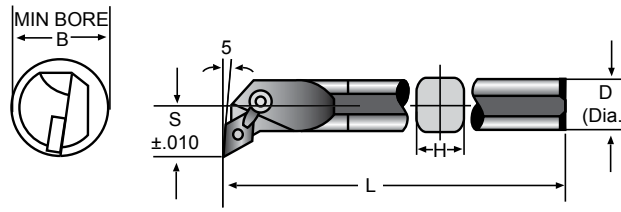
Under 1/4 I.C.	Over 1/4 I.C.
2 = 5/16	2 = 1/4
5 = 5/32	3 = 3/8
6 = 3/16	4 = 1/2
	5 = 5/8
	6 = 3/4
	7 = 7/8
	8 = 1



BMDLN Series

For Internal Boring







**GAGE INSERT
DNMG432**

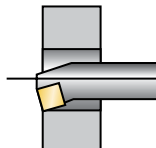
These figures show right hand tools.

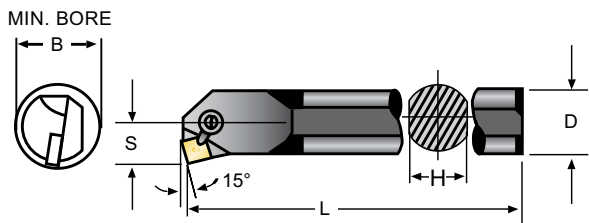
Sumitomo Cat. No.	STKD.		Dimensions					Insert		Shim	Cam	Clamp	Clamp Screw	Wrench	Wrench
	R	L	D	Min. Bore B	L	S	H	Shape	Size						
BMDLNR/L 204	•	•	1.250	2.000	14.000	1.000	1.280	DN□□	43□	SDW423	CPB43	CCM8F-L	WB8F-20	LH030	LH040

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

BMSKN Series

For Internal Boring







**GAGE INSERTS
SNMG432**

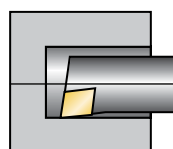
These figures show right hand tools.

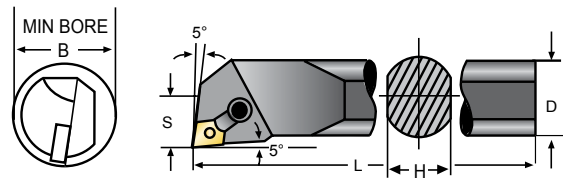
Sumitomo Cat. No.	STKD.		Dimensions					Insert		Shim	Cam	Clamp	Clamp Screw	Wrench	Wrench
	R	L	D	Min. Bore B	L	S	H	Shape	Size						
BMSKNR/L 244	•	•	1.500	1.781	14.000	.890	1.480	SN□□	43□	SSW423	CPB43S	CCM8F	WB8F-30	LH030	LH040
BMSKNR/L 284	•	•	1.750	2.031	14.000	1.015	1.655				CPB43				
BMSKNR/L 324	•	•	2.000	2.563	16.000	1.281	1.815								

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right hand Insert.
Maximum overhang=3 x D

BMCLN Series

For Internal Boring







**GAGE INSERT
CNMA432**

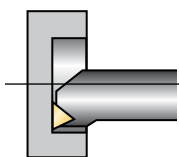
These figures show right hand tools.

Sumitomo Cat. No.	STKD.		Dimensions					Insert		Shim	Cam	Clamp	Clamp Screw	Wrench	Wrench
	R	L	D	Min. Bore B	L	S	H	Shape	Size						
BMCLNR/L 244	•	•	1.500	1.781	14.000	.890	1.350	CN□□	43□	SCW423	CPB43S	CCM8F	WB8F-30	LH030	LH040
BMCLNR/L 284	•	•	1.750	2.031	14.000	1.015	1.615				CPB43				
BMCLNR/L 324	•	•	2.000	2.563	16.000	1.281	1.850								

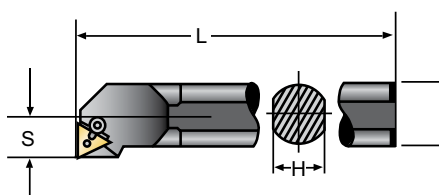
NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.
Maximum overhang=3 x D

BMTFN Series

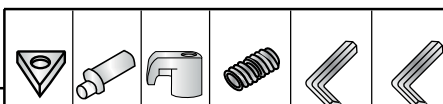
For Internal Boring



MIN BORE



GAGE INSERT
TNMG□□□



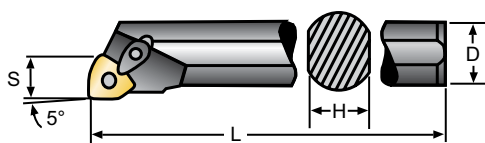
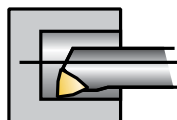
These figures show right hand tools.

Sumitomo Cat. No.	STKD.		Dimensions					Insert		Shim	Cam	Clamp	Clamp Screw	Wrench	Wrench
	R	L	D	Min. Bore B	L	S	H	Shape	Size						
BMTFNR/L 243	•	•	1.500	2.063	14.000	1.031	1.340	TN□□	32□	STW323	CPB33	CCM8	WB8-30	LH025	LH040
BMTFNR/L 284	•	•	1.750	2.313	14.000	1.156	1.575		43□	STW434	CPB44T			LH030	
BMTFNR/L 324	•	•	2.000	2.563	16.000	1.281	2.850								

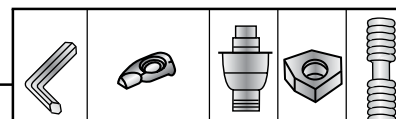
Maximum overhang=3 x D

BMWLN Series

For Internal Boring



GAGE INSERT
WNMG432



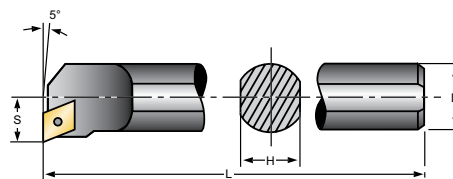
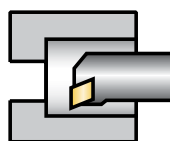
These figures show right hand tools.

Sumitomo Cat. No.	STKD		Dimensions						Insert		Wrench	Clamp	Pin	Shim	Screw
	R	L	Min. Bore B	D	L	S	H	θ°	Shape	Shape					
BMWLNRL 164	•	•	1.25	1.000	12.000	.625	.875	−15°	WN□□	43□	LH030	BCH05RM6L	BWP46	SWB422	WB6-16
BMWLNRL 204	•	•	1.53	1.250	14.000	.765	1.132	−14°							
BMWLNRL 244	•	•	1.78	1.500	14.000	.890	1.382	−12°							

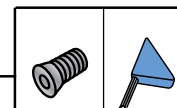
Maximum overhang=3 x D

BSCLO Series

For Internal Boring



GAGE INSERT
CPGM□□□



These figures show right hand tools.

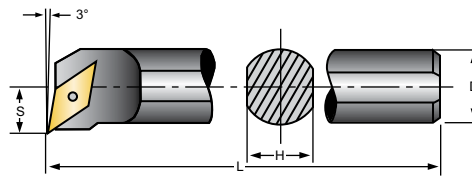
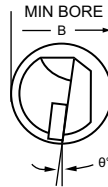
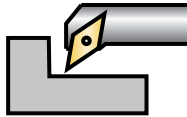
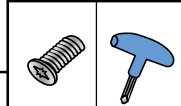
Sumitomo Cat. No.	STKD		Dimensions					Insert		Screw	Wrench	
	R	L	Min. Bore B	D	L	S	H	θ°	Shape			Size
BSCLOLR/L 062	•	•	.500	.375	6.000	.250	.336	−5°	CP□□	2.51.5□	BFTX0305A	TRX10
BSCLOLR/L 082	•	•	.625	.500	6.000	.313	.462	−2°				
BSCLOLR/L 103	•	•	.750	.625	6.500	.375	.586	−2°	CP□□	32□	BFTX0407A	TRX15
BSCLOLR/L 123	•	•	1.000	.750	10.000	.500	.672	0°				
BSCLOLR/L 164	•	•	1.125	1.000	12.000	.563	.882	−1°	CP□□	43□	BFTX0509A	TRX20

Maximum overhang = 3 x D



BSDJO Series

For Internal Boring

**GAGE INSERT**
DCGT□□□

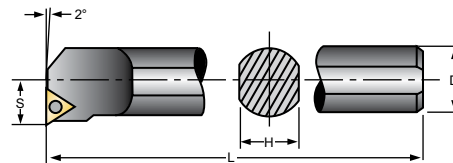
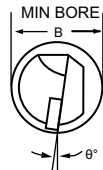
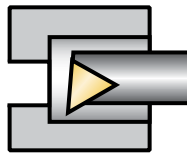
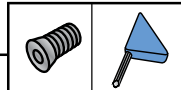
These figures show right hand tools.

Sumitomo Cat. No.	STKD.		Dimensions						Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	S	H	θ°	Shape	Size		
BSDJOR/L 061	•	•	.516	.375	5.000	.306	.336	-6°	DC□□	21.5□	BFTX02506	TRX08
BSDJOR/L 081	•	•	.687	.500	6.000	.368	.461	-6°				
BSDJOR/L 102	•	•	.813	.625	8.000	.431	.586	-6°				
BSDJOR/L 123	•	•	1.000	.750	10.000	.493	.671	-6°	DC□□	32.5□	BFS0410T	TRX10

Maximum overhang = 3 x D

BSTJO Series

For Internal Boring

**GAGE INSERT**
T□GT□□□

These figures show right hand tools.

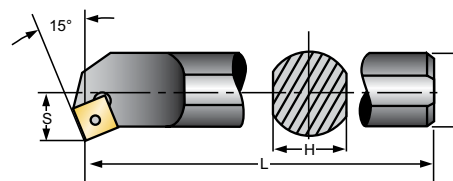
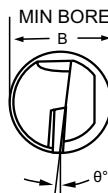
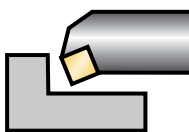
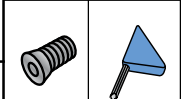
Sumitomo Cat. No.	STKD.		Dimensions						Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	S	H	θ°	Shape	Size		
BSTJOR/L 065	•	•	.313	.375	5.000	.156	.336	-12°	TBG□	52□	BFTX0204A	TRX06
BSTJOR/L 066	•	•	.375	.375	5.000	.188	.336	-8°	TPG□	63□	BFTX0306A	TRX10
BSTJOR/L 062	•	•	.500	.375	6.000	.250	.336	-5°			BFTX0307A	
BSTJOR/L 082	•	•	.625	.500	6.000	.312	.462	-4°		22□		
BSTJOR/L 102	•	•	.750	.625	6.500	.375	.586	-2°				
BSTJOR/L 123	•	•	1.000	.750	10.000	.500	.672	-2°		33□	BFTX0410A	TRX15
BSTJOR/L 163	•	•	1.125	1.000	12.000	.563	.882	0°				

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 3 x D

BSSKO Series

For Internal Boring

**GAGE INSERT**
SPGG322L

These figures show right hand tools.

Sumitomo Cat. No.	STKD.		Dimensions						Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	S	H	θ°	Shape	Size		
BSSKOR/L 083	•	•	.625	.500	6.000	.312	.462	-4°	SP□□	32□	BFTX0307A	TRX10
BSSKOR/L 103	•	•	.750	.625	6.500	.375	.586	-2°				
BSSKOR/L 123	•	•	1.000	.750	10.000	.500	.672	0°				
BSSKOR/L 163	•	•	1.125	1.000	12.000	.563	.882	0°				

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 3 x D



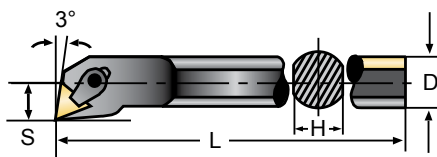
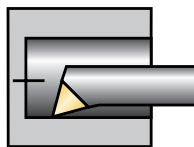
SUMITOMO STEEL SHANK BORING BARS

Series: BCTJP • BSWJO

Sumitomo Steel Shank Boring Bars

BCTJP Series

For Internal Boring



GAGE INSERT
TPG□□□

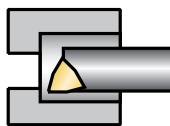
These figures show right hand tools.

Sumitomo Cat. No.	STKD		Dimensions					Insert		Seat	Seat Screw	Clamp	Clamp Bolt	Chip Breaker Piece	Wrench
	R	L	Min. Bore B	D	L	S	H	Shape	Size						
BCTJPR 123	•		1.000	.750	12.000	.500	.770	TPG	32□	—	—	CCM6BR/L	WB6-13	CBT23	LH030
BCTJPR/L 163	•	•	1.156	1.000	12.000	.578	.980			STPD322	BF0308		WB6-16	CBT43	
BCTJPR/L 203	•	•	1.531	1.250	14.000	.765	1.100					CCM8F	WB8F-30	CBT44	
BCTJPR 243	•		1.781	1.500	14.000	.890	1.315								
BCTJPR 283	•		2.031	1.750	14.000	1.015	1.570	TPG	43□	STPD422				LH040	
BCTJPR 324	•		2.563	2.000	16.000	1.281	1.810								
BCTJPR 404	•		3.063	3.063	16.000	1.531	2.315								

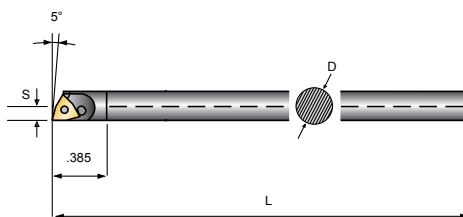
Maximum overhang = 3 x D

BSWJO Series

For Internal Boring



MIN BORE



GAGE INSERT
WBGT521L

These figures show right hand tools.

Sumitomo Cat. No.	STKD.	Dimensions							Insert	Screw	Wrench
		Min. Bore B	D	H	L	S	θ°	I			
BSWJOR 035	•	.228	.187	—	2.500	.062	-12°	—	WBGT 52□L	BHF0203T	TH015

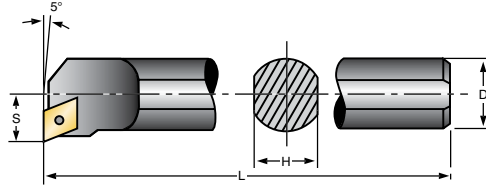
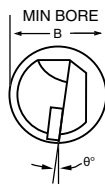
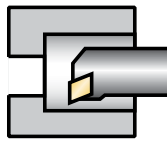
Note: Right hand boring bar requires left hand insert.

Maximum overhang = 5 x D



CSCLO Series

For Internal Boring



Solid carbide bar with fixed steel head



GAGE INSERT
CPGP□□□



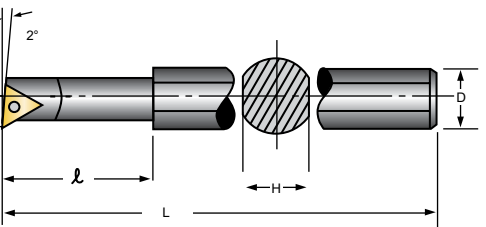
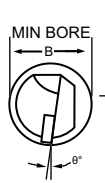
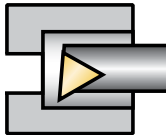
These figures show right hand tools.

Sumitomo Cat. No.	STKD.		Dimensions						Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	S	H	θ°	Shape	Size		
CSCLO/L 062	•	•	.500	.375	6.000	.250	.336	-5°	CP□□	2.51.5□	BFTX0305A	TRX10
CSCLO/L 082	•	•	.625	.500	6.000	.313	.462	-2°	CP□□	32□	BFTX0407A	TRX15
CSCLO/L 103	•	•	.750	.625	6.500	.375	.586	-2°	CP□□	32□	BFTX0407A	TRX15

Maximum overhang = 5 x D

CSTJO Series

For Internal Boring



Solid carbide bar with fixed steel head



GAGE INSERT
TGT□□□LFW



These figures show right hand tools.

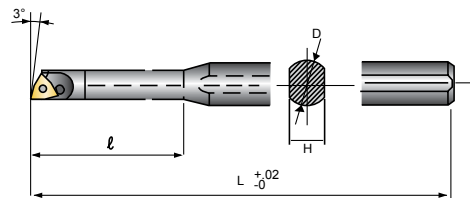
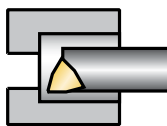
Sumitomo Cat. No.	STKD		Dimensions							Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	S	H	I	θ°	Shape	Size		
CSTJOR/L 065	•	•	.313	.375	5.000	.1560	.336	1.781	−12°	TBG□ TPG□	52□	BFTX0204A	TRX06
CSTJOR/L 066	•	•	.375	.375	5.000	.1880	.336	1.781	−8°		63□	BFTX0306A	
CSTJOR/L 062	•	•	.500	.375	7.000	.2500	.336	—	−5°		22□	BFTX0307A	TRX10
CSTJOR/L 082	•	•	.625	.500	8.000	.3125	.462	—	−2°		22□	BFTX0307A	
CSTJOR/L 102	•	•	.750	.625	10.000	.3750	.586	—	−2°		33□	BFTX0410A	TRX15
CSTJOR/L 123	•	•	1.000	.750	10.000	.5000	.672	—	−2°				

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 5 x D

CSWJO Series

For Internal Boring



Solid carbide bar with fixed steel head



GAGE INSERT
WBG521L



These figures show right hand tools.

Sumitomo Cat. No.	STKD.	Dimensions							Insert	Screw	Wrench
		Min. Bore B	D	H	L	S	θ°	I			
CSWJOR 055	•	.234	.375	.276	5.000	.117	-12°	1.18	WBG□ 52□L	BFTX0203A	TRX06
CSWJOL 055	•	.234							WBG□ 52□R		

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 5 x D

SUMI-UFO Boring Bars Nomenclature

The SUMI-UFO bars feature a wider more rigid cross section for deeper cutting (up to 5 times with steel bars, up to 7 times with carbide bars) without chatter, an ultra high positive cutting edge for freer cutting and a larger chip groove for better chip flow. With these features, SUMI-UFO bars give you the ability to bore deeper holes with better surface finishes and improved chip control.

Boring Bar Identification System

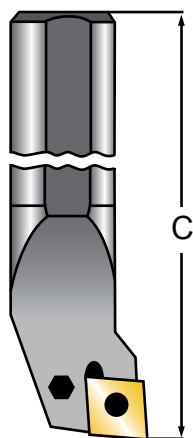
1 Type of Bar

Solid Steel	Solid Carbide
S	C

2 Shank Diameter

	06 = 3/8
	07 = 7/16
	08 = 1/2
	09 = 9/16
	10 = 5/8
	11 = 11/16
	12 = 3/4
	13 = 13/16
	14 = 7/8
	15 = 15/16
	16 = 1

3 Bar Length



C mm	Symbol
(inch) mm	
(3) 80	F
(4) 100	H
(5) 125	K
(6) 150	M
(7) 180	Q
(8) 200	R
(10) 250	S
(12) 300	T
(14) 350	U
(15.75) 400	V
(17.75) 450	W
(19.7) 500	Y
Special	X

4 Clamping System

C Clamp Lock
S Screw Clamp
P Pin Lock

S	06	K	-	S	T	U	B	R	5
1	2	3		4	5	6	7	8	9

5 Insert Shape

S	T
C	D
K	V
W	

6 Bar Style

L	K
F	U
Q	

7 Insert Clearance Angle

B	C
N	P

9 Insert I.C.

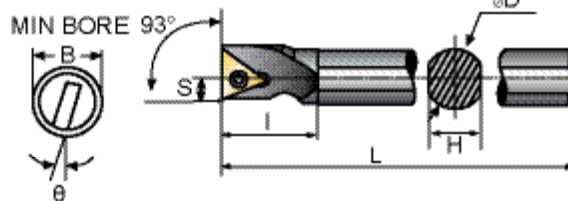
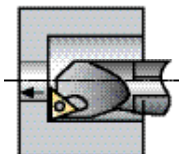
5 = 5/32
6 = 3/16
7 = 7/32
8 = 1/4
0 = 5/16

8 Hand of Tool

R	L

S-STUP Series

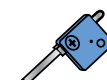
For Internal Boring



Steel shank bar



GAGE INSERT
TPGT□□□LFW



These figures show right hand tools.

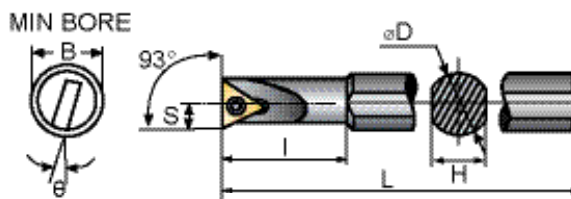
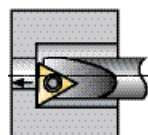
Sumitomo Cat. No.	STKD.		Dimensions							Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	H	S	I	θ°	Shape	Size		
S06K-STUPR/L6	•	•	.375	.375	5.000	.336	.1875	1.250	-10°	TPG□	63□	BFTY02205	TRX06
S06M-STUPR/L8	•	•	.500	.375	6.000	.336	.250	—	-8°	TPG□	21.5□	BFTX02507	TRX08
S08M-STUPR/L8	•	•	.625	.500	6.000	.461	.3125	—	-6°	TPG□	21.5□	BFTX02507	
S10Q-STUPR/L8	•	•	.750	.625	7.000	.591	.625	—	-2°	TPG□	21.5□	BFTX02507	
S12S-STUPR/L8	•	•	1.000	.750	10.000	.669	.500	—	-4°	TPG□	21.5□	BFTX02507	
S16T-STUPR/L8	•	•	11.125	1.000	12.000	.832	.5625	—	-2°	TPG□	21.5□	BFTX02507	

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 5 x D

S-STUB Series

For Internal Boring



GAGE INSERT
TBGT520LFW



These figures show right hand tools.

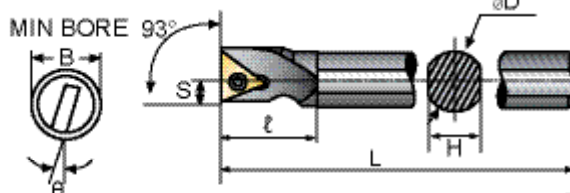
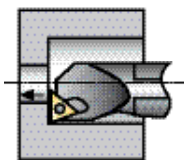
Sumitomo Cat. No.	STKD.		Dimensions							Insert		Screw	Wrench
	R	L	Min. Bore B	D	L	H	S	I	θ°	Shape	Size		
S06K-STUBR/L5	•	•	.313	.375	5.000	.336	.156	1.0	-12°	TBG□	52□	BFTX0204A	TRX06

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 5 x D

C-STUP Series

For Internal Boring

**GAGE INSERT**
TPGT□□□LFW

Solid carbide bar with fixed steel head

These figures show right hand tools.



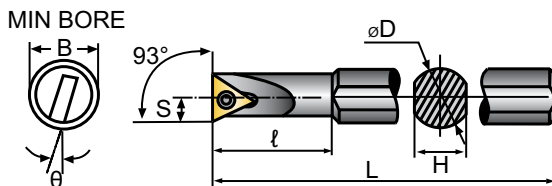
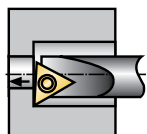
Sumitomo Cat. No.	STKD.		Dimensions							Insert		Screw	Wrench	Replacement Head
	R	L	Min. Bore B	D	L	H	S	l	θ°	Shape	Size			
C06K-STUPR/L6	•	•	.375	.375	5.000	.336	.188	1.800	-10°	TPG□	63□	BFTY0204A	TRX06	RH06STUPR/L6
C06Q-STUPR/L8	•	•	.500	.375	7.000	.336	.250	—	-8°	TPG□	21.5□	BFTX02507	TRX08	RH06STUPR/L8
C08R-STUPR/L8	•	•	.625	.500	8.000	.461	.313	—	-6°	TPG□	21.5□	BFTX02507		RH08STUPR/L8
C10S-STUPR/L8	•	•	.750	.625	10.000	.591	.375	—	-2°	TPG□	21.5□	BFTX02507		RH10STUPR/L8
C12S-STUPR/L8	•	•	1.000	.750	10.000	.669	.500	—	-4°	TPG□	21.5□	BFTX02507		RH12STUPR/L8

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 7 x D

C-STUB Series

For Internal Boring

**GAGE INSERT**
TBGT520LFW

Solid carbide bar with fixed steel head

These figures show right hand tools.



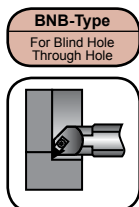
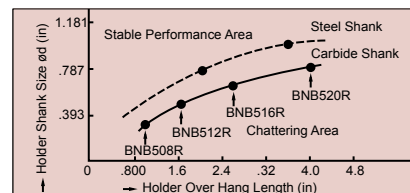
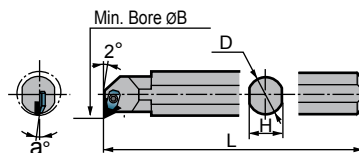
Sumitomo Cat. No.	STKD.		Dimensions							Insert		Screw	Wrench	Replacement Head
	R	L	Min. Bore B	D	L	H	S	l	θ°	Shape	Size			
C06K-STUBR/L5	•	•	.313	.375	5.00	.336	.156	1.800	-12°	TBG□	52□	BFTX0204A	TRX06	RH06STUBR/L5

NOTE: Right Hand Boring Bar requires Left Hand Insert. Left Hand Boring Bar requires Right Hand Insert.

Maximum overhang = 7 x D

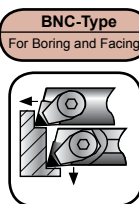
CBN Boring Series

- Solid carbide shank and head adds rigidity.
- Max. overhang, $L = 5 \times D$
- Minimal bar deformation produces excellent boring accuracy.
- Minimal vibration produces a superior surface finish.



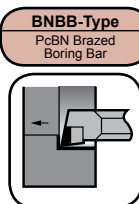
Sumitomo Cat. No.	Dimensions					Hardware				Insert		
Right Hand	Min. Bore øB	D	L	H	α°	Clamp	Clamp Screw	Wrench	Nut	I.C.	Thick	Cat. No.
BNB508R	.394" (10mm)	.315" (8mm)	5.5" (140mm)	.275" (7mm)	−9°	BNBC	BH0306	TH020	BNB W2	.156	.125	TBGE52
BNB512R	.591" (15)	.472" (12)	6.3" (160)	.433" (11)	−6°				BNB W4			
BNB516R	.787" (20)	.630" (16)	7" (180)	.551" (14)	−5°		BH0308		BNB W7			
BNB520R	.984" (25)	.787" (20)	7" (180)	.709" (18)	−4°							

* BNB boring bars are 100% solid carbide (head and shank).



Sumitomo Cat. No.	Dimensions					Hardware				Insert		
Right Hand	Min. Bore øB	D	L	H	α°	Clamp	Clamp Screw	Wrench	Nut	I.C.	Thick	Cat. No.
BNC508R	.394" (10mm)	.315" (8mm)	5.5" (140mm)	.275" (7mm)	-9°	BNBC	BH0306	TH020	BNB W2	.1875	.125	NU- CCGE62
BNC510R	.472" (12)	.394" (10)	5.5" (140)	.35" (9)	-8°				BNB W4			
BNC512R	.591" (15)	.472" (12)	6.3" (160)	.43" (11)	-6°		BH0308		BNB W7			
BNC516R	.787" (20)	.630" (16)	7" (180)	.551" (14)	-5°							
BNC520R	.984" (25)	.787" (20)	7" (180)	.709" (18)	-4°							

* BNC boring bars are 100% solid carbide (head and shank).



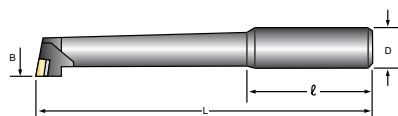
Sumitomo Cat. No.	Dimensions (mm)						Drawing
Right Hand	Grade	Min. Bore øB	L	D	H	R	
BNBB 03R	•	3.5	60	3.0	24	0.2	
BNBB 035R	★	4.0	60	3.5	2.9	0.2	
BNBB 04R	•	4.5	60	4.0	3.4	0.2	
BNBB 045R	★	5.0	60	4.5	3.9	0.2	
BNBB 05R	•	5.5	80	5.0	4.4	0.2	
BNBB 055R	★	6.0	80	5.5	4.9	0.2	
BNBB 06R	•	6.5	80	6.0	5.4	0.2	
BNBB 065R	★	7.0	80	6.5	5.9	0.2	
BNBB 07R	★	7.5	100	7.0	6.4	0.2	
BNBB 075R	★	8.0	100	7.5	6.9	0.2	
BNBB 08R	★	8.5	100	8.0	7.4	0.2	

★ = Worldwide Warehouse item

• = USA stocked item

SUMIBORON Mini Boring Bars SJB Series

Jig Boring Tools



These figures show right hand tools.

Sumitomo Cat. No.	Dimensions (Inches)				Grade
	Min. Bore B	D	L	l	BN250
SJB2416	.250	.375	2.000	1.1875	•
SJB2420	.3125	.375	2.375	1.1875	•
SJB2424	.375	.375	2.750	1.1875	•
SJB2432	.500	.375	2.750	1.1875	•
SJB2440	.625	.375	3.750	1.1875	•

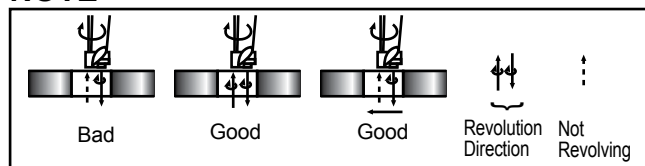
• = USA stocked item

Sumitomo Cat. No.	Dimensions (mm)				Grade
	øD	ød	L	l	BN250
SJB0804	8	4	45	32	★
SJB0805	8	5	45	32	★
SJB0806	8	6	50	30	★
SJB0808	8	8	60	30	★
SJB1006	10	6	50	30	★
SJB1008	10	8	60	30	★
SJB1010	10	10	70	30	★
SJB1012	10	12	70	30	★
SJB1015	10	15	70	30	★

★ = Worldwide Warehouse item

Recommended Cutting Conditions

Rotating speed	800 rpm, or more	Low speed may cause chattering and chipping on the cutting edge
Depth of cut	.001~.012 in./per side	Excessive depth of cut may cause larger tool deflection resulting in deterioration of bore size
Feed rate (f)	.001~.004 in. IPR	—

NOTE

Either rotate the tool when removing or pull the tool away from work piece.





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■ Features & Benefits

TGA Inserts with B-Groove Chipbreaker

- Exceptional chip control for a wide variety of grooving applications
- New Super ZX coated grade AC530U for machining steel, stainless steel, and non-ferrous materials

■ INSERTS

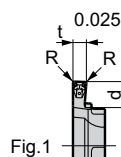
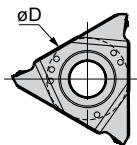


Fig. 1

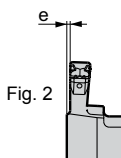


Fig. 2

Sumitomo Cat.	AC530U		Tooth	Dimensions <i>mm</i> (in)				Max. Groove		Fig.	Holder(s)						
No.	R	L	t	e	R	D	T	d	OD			ID					
TGA R/L4150BF	★	★	1.50	0.250	0.2	12.70	4.76	3.9	3.5	2.5	2	GWC R/L2020-25 GWC R/L2525-25 GWCI R/L432					
TGA R/L4165BF	★	★	1.65	0.175													
TGA R/L4175BF	★	★	1.75	0.125													
TGA R/L4185BF	★	★	1.85	0.075													
TGA R/L4200BF	★	★	2.00	0.000							1						
TGA R/L4220BF	★	★	2.20														
TGA R/L4230BF	★	★	2.30														
TGA R/L4250BF	★	★	2.50														
TGA R/L4265BF	★	★	2.65		0.000	0.3	12.70	4.76	5.4	5.0		2.5	1	GWC R/L2525-35 GWCI R/L432			
TGA R/L4270BF	★	★	2.70														
TGA R/L4280BF	★	★	2.80														
TGA R/L4300BF	★	★	3.00														
TGA R/L4320BF	★	★	3.20														
TGA R/L4330BF	★	★	3.30														
TGA R/L4350BF	★	★	3.50														
TGA R/L4370BF	★	★	3.70														
TGA R/L4390BF	★	★	3.90														
TGA R/L4400BF	★	★	4.00	0.4													
TGA R/L4410BF	★	★	4.10														
TGA R/L4420BF	★	★	4.20														
TGA R/L4430BF	★	★	4.30														
TGA R/L4440BF	★	★	4.40														
TGA R/L4450BF	★	★	4.50	(0.000)		(0.012)					(0.016)				(0.062)	(0.010)	(0.003)
TGA R/L40062BF	○	○	(0.062)														
TGA R/L40072BF	○	○	(0.072)														
TGA R/L40088BF	○	○	(0.088)														
TGA R/L40094BF	○	○	(0.094)														
TGA R/L40097BF	○	○	(0.097)														
TGA R/L40105BF	○	○	(0.105)														
TGA R/L40110BF	○	○	(0.110)														
TGA R/L40122BF	○	○	(0.122)														
TGA R/L40125BF	○	○	(0.125)														
TGA R/L40142BF	○	○	(0.142)														
TGA R/L40156BF	○	○	(0.156)														

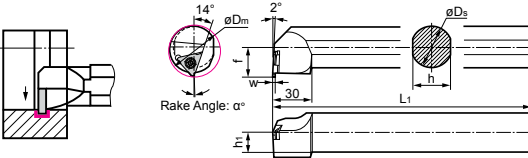
○ Available 3rd Quarter 2009

■ EXTERNAL GROOVING

Sumitomo Cat. No.	Stock		Dimensions mm (in)						Max. Grooving Depth	Screw	Wrench	Clamp	Double Screw	Wrench
	R	L	h	b	L ₁	f	h ₁	W						
GWC R/L2020-25	●	●	20	20	125	25	20	1.50 - 2.30	3.5	BFTX0511N	TRX20	CCM8U L/R	WB8-22T/TL	LT27
GWC R/L2020-35	●	●	20	20	125	25	20	2.50 - 4.80	5.0					
GWC R/L2525-25	●	●	25	25	150	30	25	1.50 - 2.30	3.5					
GWC R/L2525-35	●	●	25	25	150	30	25	2.50 - 4.80	5.0					
GWC R/L124C-25	○	○	(0.75)	(0.75)	(5.00)	(0.938)	(0.75)	(0.060 - 0.090)	(0.1378)					
GWC R/L124C-35	○	○	(0.75)	(0.75)	(5.00)	(0.938)	(0.75)	(0.060 - 0.090)	(0.1969)					
GWC R/L164D-25	○	○	(1.00)	(1.00)	(6.00)	(1.18)	(1.00)	(0.100 - 0.189)	(0.1378)					
GWC R/L164D-35	○	○	(1.00)	(1.00)	(6.00)	(1.18)	(1.00)	(0.100 - 0.189)	(0.1969)					

○ Available 3rd Quarter 2009

■ INTERNAL GROOVING

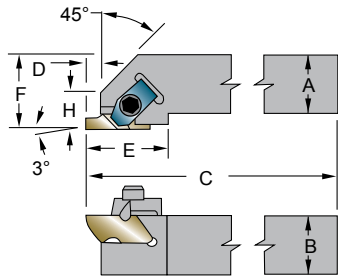
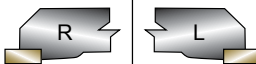
INTERNAL GROOVING													
													
Sumitomo Cat. No.	Stock		Dimensions mm (in)						Min. Bore øDm	Grooving Width (mm) W	Max. Grooving Depth (mm)	Screw	Wrench
	R	L	øDs	h	L1	f	h1						
GWCI R/L325	●	●	25	23	200	17.5	11.5	35	0.33 - 2.80	0.5 - 2.0	BFTX0409N	TRX15	
GWCI R/L432	●	●	32	30	250	22.5	15.0	40	1.25 - 4.80	1.7 - 2.5	BFTX0511N	TRX20	
GWCI R/L 164	○	○	(1.000)	(0.905)	(7.850)	(0.690)	(0.543)	(1.380)	(0.013 - 0.110)	(0.020 - 0.080)	BFTX0409N	TRX15	
GWCI R/L 204	○	○	(1.250)	(1.181)	(10.00)	(0.890)	(0.590)	(1.580)	(0.050 - 0.189)	(0.070 - 0.100)	BFTX0511N	TRX20	

○ Available 3rd Quarter 2009

Rake Angle with Insert fitted on holder (α°)	AC530U
EXTERNAL: GWC R/L	10°
INTERNAL: GWCI R/L	1°



■ SUMINOTCH GROOVING TOOLHOLDERS

SS Series													
				A	B	C	D	E	F	H			
Sumitomo Cat. No.		Gage Insert									Right Hand Clamp	Left Hand Clamp	Clamp Screw
Right Hand	Left Hand	R.H.	L.H.										
SSR-82V	SSL-82V	SG-2R	SG-2L	.500	.500	3.500	.140	1.25	.750	.50	TF-74	TF-75	S-310
SSR-102B	SSL-102B	SG-2R	SG-2L	.625	.625	4.500	.140	1.25	1.000	.50	TF-74	TF-75	S-310
SSR-122B	SSL-122B	SG-2R	SG-2L	.750	.750	4.500	.140	1.25	1.000	.50	TF-74	TF-75	S-310
SSR-162C	SSL-162C	SG-2R	SG-2L	1.000	1.000	5.000	.140	1.25	1.250	.50	TF-74	TF-75	S-310
SSR-123A	SSL-123A	SG-3R	SG-3L	.750	.750	4.000	.210	1.25	1.000	.50	TF72	TF-73	S-412
SSR-123B	SSL-123B	SG-3R	SG-3L	.750	.750	4.500	.210	1.25	1.000	.50	TF72	TF-73	S-412
SSR-163C	SSL-163C	SG-3R	SG-3L	1.000	1.000	5.000	.210	1.25	1.250	.50	TF72	TF-73	S-412
SSR-163D	SSL-163D	SG-3R	SG-3L	1.000	1.000	6.000	.210	1.25	1.250	.50	TF72	TF-73	S-412
SSR-853D	SSL-853D	SG-3R	SG-3L	1.000	1.250	6.000	.210	1.25	1.500	.50	TF72	TF-73	S-412
SSR-203D	SSL-203D	SG-3R	SG-3L	1.250	1.250	6.000	.210	1.25	1.500	.50	TF72	TF-73	S-412

■ SUMINOTCH GROOVING BORING BARS

A-SE Series

Sumitomo Cat. No.

Gage Insert

D

C

F

Min.
Bore

A

Right
Hand
Clamp

Left
Hand
Clamp

Clamp
Screw

Right Hand

Left Hand

R.H.

L.H.

A08-SER2

A08-SEL2

SG-2R

SG-2L

.500

8.000

.437

0.730

1/4-18 NPT

TF-74

TF-75

S-310

A10-SER2

A10-SEL2

SG-2R

SG-2L

.625

10.000

.500

1.000

1/4-18 NPT

TF-74

TF-75

S-310

A12-SER2

A12-SEL2

SG-2R

SG-2L

.750

10.000

.562

1.125

1/4-18 NPT

TF-74

TF-75

S-310

A16-SER2

A16-SEL2

SG-2R

SG-2L

1.000

12.000

.688

1.375

1/4-18 NPT

TF-74

TF-75

S-310

A16-SER3

A16-SEL3

SG-3R

SG-3L

1.000

12.000

.688

1.375

1/4-18 NPT

TF72

TF-73

S-412

A20-SER3

A20-SEL3

SG-3R

SG-3L

1.250

14.000

.875

1.750

1/4-18 NPT

TF72

TF-73

S-412

A24-SER3

A24-SEL3

SG-3R

SG-3L

1.500

14.000

1.000

2.000

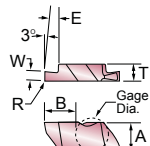
1/4-18 NPT

TF72

TF-73

S-412

Note: Right-hand boring bars use left-hand inserts. Left-hand boring bars use right-hand inserts.



- USA Stocked Item
- ★ Worldwide Warehouse Item
- ▲ USA Limited Availability Item

SUMINOTCH GROOVING INSERTS

Left				Dimensions (in)							Right			
SG	Coated	CBN		W ±.001	R	E ±.001	T	A	B	Gage Dia.	SG	Coated	CBN	
	EH520V	BN250	BN350									EH520V	BN250	BN350
SG-2031L	●			.031	.002/.005	.050					SG-2031R	●		
SG-2041L	●			.041	.002/.005	.050					SG-2041R	●		
SG-2047L	●			.047	.002/.005	.050					SG-2047R	●		
SG-2058L	●			.058	.005/.010	.050	.150	.219	.2700	.1875	SG-2058R	●		
SG-2062L	●			.062	.005/.010	.110					SG-2062R	●		
SG-2094L	●			.094	.005/.010	.110					SG-2094R	●		
SG-2125L	●			.125	.005/.010	.110					SG-2125R	●		
SG-3047L	●			.047	.005/.010	.075					SG-3047R	●	●	●
SG-3062L	●	●	●	.062	.005/.010	.094					SG-3062R	●	●	●
SG-3072L	●			.072	.005/.010	.094					SG-3072R	●		
SG-3088L	●			.088	.005/.010	.094					SG-3088R	●		
SG-3094L	●	●	●	.094	.005/.010	.150					SG-3094R	●	●	●
SG-3097L	●			.097	.005/.010	.150					SG-3097R	●		
SG-3105L	●			.105	.005/.010	.150					SG-3105R	●		
SG-3110L	●			.110	.110/.015	.150	.195	.344	.4050	.3750	SG-3110R	●		
SG-3122L	●			.122	.005/.010	.150					SG-3122R	●		
SG-3125L	●	●	●	.125	.005/.010	.150					SG-3125R	●	●	●
SG-3142L	●			.142	.005/.010	.150					SG-3142R	●		
SG-3156L	●			.156	.005/.010	.150					SG-3156R	●		
SG-3178L	●			.178	.005/.010	.150					SG-3178R	●		
SG-3185L	●			.185	.020/.025	.150					SG-3185R	●		
SG-3189L	●			.189	.020/.025	.150					SG-3189R	●		●

Left				Dimensions (in)							Right	
SG-CB	Coated			W ±.001	R	E ±.001	T	A	B	Gage Dia.	SG-CB	Coated
	EH520V											EH520V
SG-2047L-CB	●			.047	.002/.005	.050					SG-2047R-CB	●
SG-2062L-CB	●			.062	.005/.010	.110					SG-2062R-CB	●
SG-2078L-CB	●			.078	.005/.010	.110	.150	.219	.2700	.1875	SG-2078R-CB	●
SG-2094L-CB	●			.094	.005/.010	.110					SG-2094R-CB	●
SG-2125L-CB	●			.125	.005/.010	.110					SG-2125R-CB	●
SG-3047L-CB	●			.047	.005/.010	.075					SG-3047R-CB	●
SG-3062L-CB	●			.062	.005/.010	.094					SG-3062R-CB	●
SG-3072L-CB	●			.072	.005/.010	.094					SG-3072R-CB	●
SG-3078L-CB	●			.088	.005/.010	.094					SG-3078R-CB	●
SG-3088L-CB	●			.094	.005/.010	.150	.195	.344	.4050	.3750	SG-3088R-CB	●
SG-3094L-CB	●			.097	.005/.010	.150					SG-3094R-CB	●
SG-3125L-CB	●			.185	.020/.025	.150					SG-3125R-CB	●
SG-3189L-CB	●			.189	.020/.025	.150					SG-3189R-CB	●

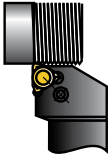
RECOMMENDED RUNNING CONDITIONS

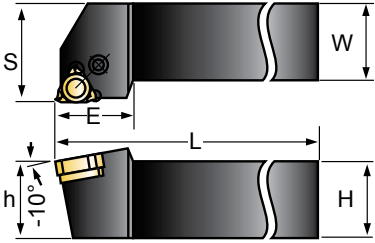
Material		Speed (SFM)	Feed Rate (in/rev)
Steels	free-machining carbon alloys	450-750	.004 - .012
	plain carbon steels	400-700	
	alloy steels 190-330HB	400-700	
	alloy steels 330-450HB	350-600	
Stainless Steels	martensitic/ferritic stainless steel	250-650	.004 - .009
	austenitic stainless steel	175-700	
	gray cast iron 190-330HB	400-700	.004 - .015
Cast Iron	gray cast iron 330-450HB	350-600	
	alloy/ductile irons	250-650	
	high temp alloys 200-260HB	60-250	.003 - .008
High Temperature Alloys	high temp alloys 260-450HB	30-175	
	titanium alloys Ti 6Al-4V	90-250	
	free-machining aluminum alloys	600-2500	.004 - .012
Non-Ferrous Materials	copper/zinc/brass	300-900	
	non-metallics	350-1200	



LTER Series

For External Threading





LAYDOWN EXTERNAL THREADING INSERTS:



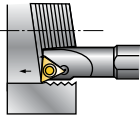
TME ____ R
TUE ____ R
TWE ____ R

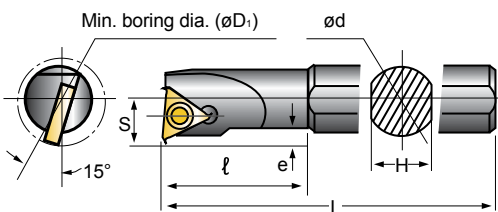
These figures show right hand tools.

Sumitomo Cat. No.	STKD.	Dimensions						Lever Pin	Clamp Bolt	Shim	Shim Pin	Wrench
		H	W	h	S	L	E					
LTER 123C	•	.750	.750	.750	1.000	5.000	1.000	LCL3S	LCS3TE	LSTE31-0	LSP3	LH025
LTER 163D	•	1.000	1.000	1.000	1.250	6.000	1.000					

STIR Series

For Internal Threading





LAYDOWN INTERNAL THREADING INSERTS:



TMI ____ R
TNPTI ____ R

Sumitomo Cat. No.	STKD.	Dimensions							Screw	Wrench
		ø d	H	L	Min.Bore øD1	S	e	l		
STIR 103	•	.625	.590	6.000	.750	.406	.006	1.378	BFTX03508	TRX10
STIR 123	•	.750	.670	7.000	1.000	.492	.006	1.575	BFTX03508	TRX10
STIR 163	•	1.000	.905	8.000	1.150	.600	.006	1.500	BFTX03508	TRX10
STIR 203	•	1.250	1.142	10.000	1.400	.724	.006	1.500	BFTX03508	TRX10
STIR 243	•	1.500	1.378	12.000	1.700	.897	.006	1.500	BFTX03508	TRX10



Always check your infeed tables
to produce excellent threads and
tolerances.



Solid Carbide • Solid Quality • Solid Performance

Because of the solid tungsten carbide support blade, Sumitomo cut-off tools are able to perform at depths 40% greater than any tools now available. Tungsten carbide is more rigid than steel so even in long overhang applications, bending, vibration and movement at the cutting edge are drastically reduced.

The solid carbide support blades fit in many existing cut-off tool blocks.

The unique positive rake inserts are available in neutral, right hand, and left hand styles. The insert design collapses the width of the

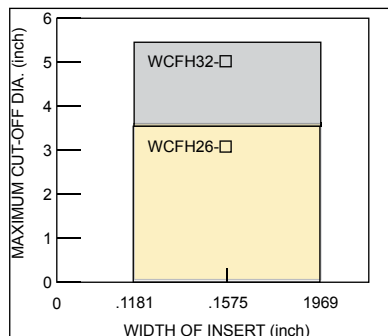
chip, breaks it and facilitates chip flow away from the cut, thus welding and wear on the insert corners are greatly reduced, and coolant is easier to direct.

Operating at high speeds and feeds is possible because of longer tool life, and down-time for chip removal is drastically reduced.

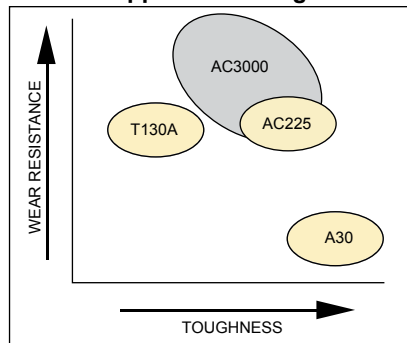
Safety is enhanced because long, stringy chips are avoided.

Note: Sumitomo Inserts fit only Sumitomo Blades.

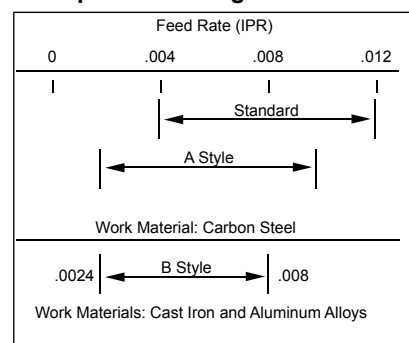
■ Maximum Cut-Off Diameter



■ Grade Application Range



■ Chipbreaker Range



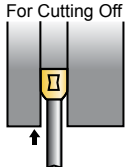
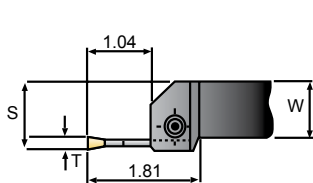
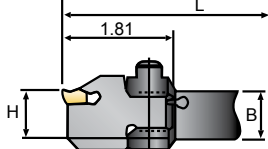
■ Inserts Application

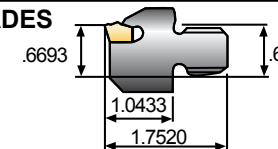
GRADE	C.B. STYLE	APPLICATION	FEATURE
AC3000	STANDARD	Heavy feed in steel (.0032-.012 ipr)	Coated insert with excellent wear resistance. Standard chipbreaker for low cutting force applications.
AC225	A	Light feed in steel (.0016-.010 ipr) Carbon steel, stainless steel	Coated insert with excellent toughness. A style chipbreaker with good chip control.
T130A	A	Light feed in steel (.0012-.0061 ipr)	Cermets produce excellent surface finish.
A30N	A	Slow speed and feed in steel	Equivalent to C5, C6 carbide.
G10E	A	For exotic materials	C2 carbide for exotic materials.
G10E	B	For cast iron and aluminum alloy	C2 carbide with a sharp cutting edge.

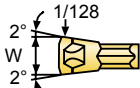
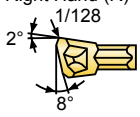
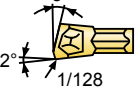
CAUTION 1. Do not use AC25 for light feed rate applications (Feed rate should be at least .004 ipr) 3. Use A style chipbreaker for low carbon steel.
2. Use AC225 for stainless steel. 4. Use coolant.

■ Recommended Cutting Conditions

GRADE	V (SFM) f (ipr)	STEEL	CARBON STEEL	STAINLESS STEEL	DIE STEEL	CAST IRON	EXOTICS
AC3000	V f	320-720 .004-.012	400-820 .004-.006	260-650 .004-.006	200-500 .004-.006	—	—
AC225	V f	260-650 .0016-.010	320-750 .0016-.008	200-600 .0016-.008	200-500 .0016-.008	—	—
T130A	V f	260-650 .0012-.006	320-750 .0012-.004	200-600 .0012-.004	200-500 .0012-.0032	—	—
A30N	V f	160-400 .002-.008	230-500 .0016-.006	230-500 .0016-.006	160-400 .0016-.006	—	—
G10E	V f	—	—	—	—	160-320 .0024-.008	100-160 .002-.003

WCFS Series HOLDERS For Cutting Off 		  HARDENED STEEL HOLDER		  										
These figures show right hand tools.														
Sumitomo Cat. No.		STKD. R L		Dimensions W B L S H T				Support Blade	Insert	Extractor	Clamp Screw	Wrench		
WCFSR/L-063-3		•	•	.625	.625	4.000	.740	.625	.1181	WCFH17-3	WCF□3□	SL-1	BX0622	LH050
WCFSR/L-075-3		•	•	.750	.750	4.500	.870	.750	.1181	WCFH17-3	WCF□3□			
WCFSR/L-075-4		•	•	.750	.750	4.500	.910	.750	.1575	WCFH17-4	WCF□4□			
WCFSR/L-075-5		•	•	.750	.750	4.500	.950	.750	.1969	WCFH17-5	WCF□5□			
WCFSR/L-100-3		•	•	1.000	1.000	6.000	1.120	1.000	.1181	WCFH17-3	WCF□3□			
WCFSR/L-100-4		•	•	1.000	1.000	6.000	1.160	1.000	.1575	WCFH17-4	WCF□4□			
WCFSR/L-100-5		•	•	1.000	1.000	6.000	1.200	1.000	.1969	WCFH17-5	WCF□5□			

BLADES 				Sumitomo Cat. No.	STOCK	Dimensions	
		SOLID CARBIDE BLADE				W	B
				WCFH17-3	•	.1181	.094
				WCFH17-4	•	.1575	.134
				WCFH17-5	•	.1969	.169

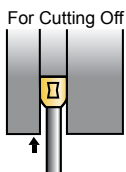
INSERTS	WCF□○□ (General Steel)			WCF□○A (Hard to Cut Materials • Slow Feed)							WCF□○B (Cast Iron • Aluminum Alloy)			
														
Neutral (N)		Sumitomo Cat. No.	Coated AC3000	W	Sumitomo Cat. No.	Coated AC225	Cermet T130A	Uncoated A30N G10E		W	Sumitomo Cat. No.	Uncoated G10E	W	
	—	—	—	—	—	—	—	—	—	—	—	—	—	
Right Hand (R)		WCFN2T	•	.0787										
		WCFR2T	•											
		WCFL2T	•											
		WCFN3	•	.1181	WCFN3A	•	•	•	•		WCFN3B	•	.1181	
		WCFR3	•		WCFR3A	•	•	•	▲	.1181	WCFR3B	•		
		WCFL3	•		WCFL3A	•	•	•	•		WCFL3B	•		
Left Hand (L)		WCFN4	•	.1575	WCFN4A	•	•	•	•		WCFN4B	•	.1575	
		WCFR4	•		WCFR4A	•	•	•	•	▲	.1575	WCFR4B		•
		WCFL4	•		WCFL4A	•	•	•	•	•		WCFL4B		•
		WCFN5	•	.1969	WCFN5A	•	•	•	•		WCFN5B	•	.1969	
		WCFR5	•		WCFR5A	•	•	•	•		WCFR5B	•		
		WCFL5	•		WCFL5A	•	•	•	•		WCFL5B	•		

• = USA stocked item

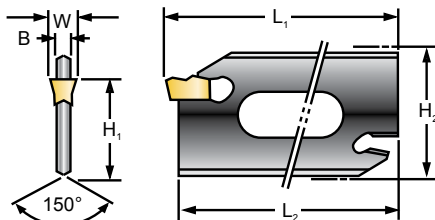
▲ = USA limited availability item

WCFH Series

SUPPORT BLADES



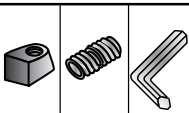
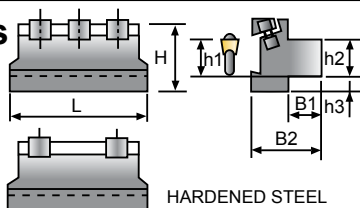
SOLID CARBIDE BLADE



Sumitomo Cat. No.	STKD.	Dimensions							Tool Block		Insert	Extractor
	R	W	B	H ₁	H ₂	L ₁	L ₂	Max. Cut-Off Dia.				
WCFH26-3	•	.1181	.0945						SBN063-26	SBU075-26	WCF□3(A, B)	SL-1
WCFH26-4	•	.1575	.1339	.844	1.031	4.344	4.281	3.150	SBN075-26		WCF□4(A, B)	
WCFH26-5	•	.1969	.1693								WCF□5(A, B)	
WCFH32-3	•	.1181	.0945						SBN100-32	SBU075-32	WCF□3(A, B)	
WCFH32-4	•	.1575	.1339	.984	1.250	5.906	5.844	5.500	SBN125-32	SBU100-32	WCF□4(A, B)	
WCFH32-5	•	.1969	.1693								WCF□5(A, B)	

SBN Series

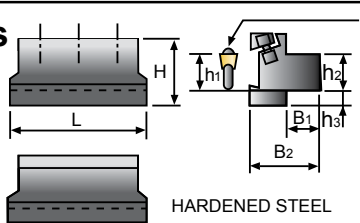
Tool Blocks



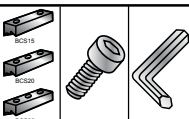
Sumitomo Cat. No.	Dimensions							Clamp	Clamp Screw	Wrench
	L	h ₁	h ₂	h ₃	H	B ₁	B ₂			
SBN063-26	3.000	.625	.625	.500	1.719	.625	1.328	BWS-30	WB8-20	LH040
SBN075-26	3.156	.750	.750	.375	1.719	.750	1.469			
SBN100-32	4.500	1.000	1.000	.3125	2.000	.8125	1.531			

SBU Series

Tool Blocks

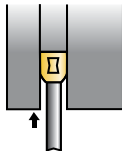
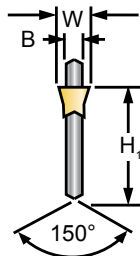
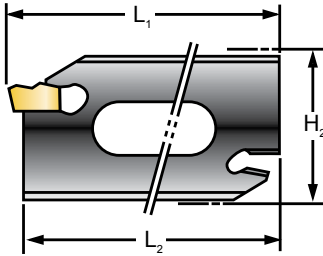
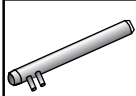


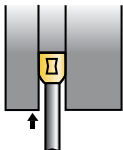
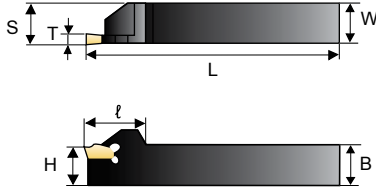
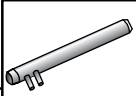
Does not include
Support Blade or Insert



Sumitomo Cat. No.	Dimensions							Wedge Clamp	Clamp Screw	Wrench
	L	H	h ₁	h ₂	h ₃	B ₁	B ₂			
SBU075-26	3.156	1.781	.750	.750	.4375	.750	1.719	BCS20	BX0622	LH050
SBU075-32	4.000	2.000	.750	.750	.531	.781	1.719			
SBU100-32	4.344	2.000	1.000	1.000	.344	.781	1.719			



STFH Series Sumi-Grip Jr. SUPPORT BLADES For Cutting Off 		  HARDENED STEEL BLADE 										
Sumitomo Cat. No.	STKD.	Dimensions							Tool Block		Insert	Wrench
	R	W	B	H ₁	H ₂	L ₁	L ₂	Max. Cut-Off Dia.				
STFH26-2	•	.0800	.0630	.8425	1.024	4.291	4.252	1.580	SBN063-26	SBU075-26	WCF□2T	SL-4
STFH26-3	•	.1200	.0945	.8425	1.024	4.291	4.252	2.760	SBN075-26		WCF□3□	
STFH32-2	•	.0800	.0630	.9843	1.260	5.866	5.827	1.580	SBN100-32	SBU075-32	WCF□2T	
STFH32-3	•	.1200	.0945	.9843	1.260	5.866	5.827	3.940	SBN125-32	SBU100-32	WCF□3□	

STFS Series Sumi-Grip Jr. TOOL HOLDERS For Cutting Off 		 HARDENED STEEL HOLDER										
These figures show right hand tools.												
Sumitomo Cat. No.	STKD.	Dimensions							Max. Cut-Off Dia.	Insert	Wrench	
	R L	W	B	L	S	H	T					
STFSR/L-063-2	• •	.625	.625	4.000	.625	.625	.0800	.650		WCF□2T	SL-4	
STFSR/L-075-2	• •	.750	.750	5.000	.750	.750	.0800	.840		WCF□2T		
STFSR/L-063-3	• •	.625	.625	4.000	.625	.625	.1200	.750		WCF□3□		
STFSR/L-075-3	• •	.750	.750	5.000	.750	.750	.1200	1.000		WCF□3□		
STFSR/L-100-3	• •	1.000	1.000	6.000	1.000	1.000	.1200	1.000		WCF□3□		

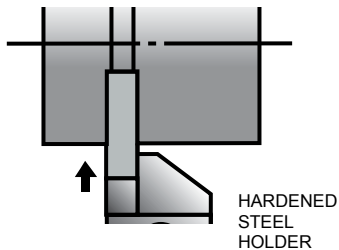
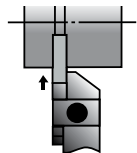
Sumi-Grip Jr. is only available in steel blades and holders.



Our sumiCutoff™ blades give you superior rigidity and minimum deflection.

CF Series HOLDERS

For External Grooving



HARDENED
STEEL
HOLDER

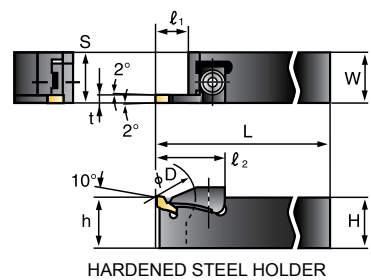
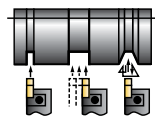
These figures show right hand tools.

Sumitomo Cat. No.	STK	Dimensions								Max. Cut-Off Dia.
		B	W	H	L	S	h	F	θ°	
CF3-3	•	.118	.500	.750	4.750	.640	1.000	0.6	5°	1.30
CF4-5	•	.198	.750	1.000	6.500	.950	1.375	1.0	10°	1.97

*Not available as left hand holder.

PFE Series HOLDERS

For External Grooving



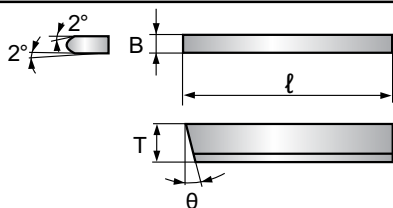
HARDENED STEEL HOLDER

These figures show right hand tools.

Sumitomo Cat. No.	STK	Dimensions								
		W	H	L	S	h	ℓ ₁	ℓ ₂	øD	
PFER 160-3	•	1	1	5	1.01	1	.39	1.18	1.25	
PFER 160-4	•	1	1	5	1.01	1	.59	1.38	1.50	
PFER 160-5	•	1	1	5	1.01	1	.79	1.57	1.97	

*Not available as left hand holder.

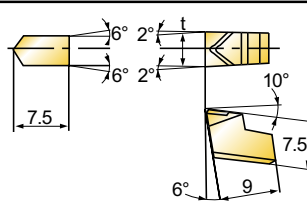
INSERTS



SOLID CARBIDE

Insert	Uncoated		Dimensions			Holder No.
	G10E		B	T	ℓ	
CFB3	•		.118	.2760	1.961	CF3-3
CFB3T	•					
CFB5			.197	.3125	2.329	CF4-5
CFB5T	•					

INSERTS



SOLID CARBIDE

Insert	Coated	T (inch)	Holder No.
	AC2000		
PFT03	•	.118	PFER 160-3
PFT04	•	.157	PFER 160-4
PFT05	•	.197	PFER 160-5

“CF” SERIES HARDWARE

Holder Cat. No.						
	Clamp	Clamp Bolt	Wrench	Stopper	Screw	Wrench
CF3-3	CFC-3	BX0512	LH040	—	—	—
CF4-5	CFC-5	BXF0618	LH040	CFD5	BTD0510	LH025

NOTE: CF3-3 has no stopper.

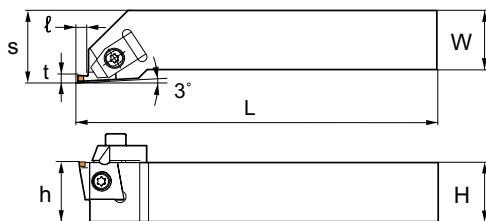
“PFE” SERIES HARDWARE

Holder Cat. No.		
	Clamp	Wrench
PFER 160-3	PCM3 R	
PFER 160-4	PCM4 R	LH040
PFER 160-5	PCM5 R	



■ Features & Benefits

- New double clamping system provides reliable grooving of hardened steel
- 80° tangentially mounted CGA style insert for improved rigidity
- Wide range of widths and grades for continuous and interrupted grooving operations
- New special coated CBN grade BNC30G extends tool life of insert



Grade	Application	Features	Hv (GPa)	TRS (GPa)
BN250	Continuous grooving	General grade with good wear resistance	31-34	1.0-1.1
BNC30G	Interrupted grooving	Tough CBN substrate and special coating with high wear and peeling resistance	33-35	1.1-1.2

■ GWB SERIES HOLDERS

Sumitomo Cat. No.	Stk.	H in (mm)	W in (mm)	h in (mm)	s in (mm)	t in (mm)	l in (mm)	L in (mm)	Insert (See p. for CGA availability & technical information)
GWBR 165D4	•	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.181 (30.0)	.059 < t ≤ .079 (1.5 < t ≤ 2.0)	.138 (3.5)	6.0 (152.4)	CGA R/L 1504□□
GWBL 165D4						.079 < t ≤ .118 (2.0 < t ≤ 3.0)	.177 (4.5)	6.039 (153.4)	CGA R/L 4□□□
						.118 < t ≤ .177 (3.0 < t ≤ 4.5)	.197 (5.0)		
GWBR 165D6	•	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.181 (30.0)	.177 < t ≤ .236 (4.5 < t ≤ 6.0)	.197 (5.0)	6.039 (153.4)	CGA R/L 1506□□
GWBL 165D6									CGA R/L 6□□□
GWBR 2525-45	★	.984 (25.0)	.984 (25.0)	.984 (25.0)	1.181 (30.0)	.059 < t ≤ .079 (1.5 < t ≤ 2.0)	.138 (3.5)	6.0 (152.4)	CGA R/L 1504□□
GWBL 2525-45						.079 < t ≤ .118 (2.0 < t ≤ 3.0)	.177 (4.5)	6.039 (153.4)	CGA R/L 4□□□
						.118 < t ≤ .177 (3.0 < t ≤ 4.5)	.197 (5.0)		
GWBR 2525-60	★	.984 (25.0)	.984 (25.0)	.984 (25.0)	1.181 (30.0)	.177 < t ≤ .236 (4.5 < t ≤ 6.0)	.197 (5.0)	6.039 (153.4)	CGA R/L 1506□□
GWBL 2525-60									CGA R/L 6□□□

• = USA Stocked Item

★ = Worldwide Warehouse Item

■ RECOMMENDED CUTTING CONDITIONS

For hardened steel:	
Cutting Speed	260 - 400 sfm (80 - 120 m/min)
Feed Rate	.0016 - .0032 ipr (.04 - .08 mm/rev)
Coolant	Continuous cut: dry or wet Interrupted cut: dry
NOTE: To avoid thermal cracking of cutting edge during interrupted cutting applications, please ensure workpiece remains dry.	

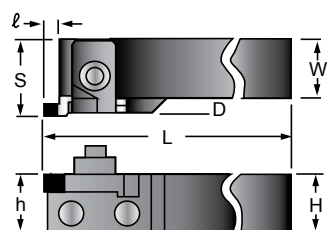
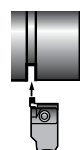
■ HARDWARE

Clamp	Clamp Screw	Insert Screw	Spring	Wrench
TF-72 (Right hand) TF-73 (Left hand)	BX0520T	BFTX 0511N	GSP06	TRX20



BNGG Series Grooving

For External Grooving

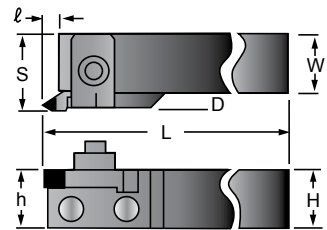
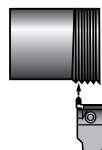


Sumitomo Cat. No.	STK R L	Dimensions							
		W	H	L	S	D	h	t	
BNGGR/L160	•	1	1	6	1.25	.281	1	.2	

- For use in hard grooving with BNGNT type inserts.
- Extremely rigid design.
- Solves the chipping problems associated with vibration.
- **ANVIL SOLD SEPARATELY.**

BNGG Series Threading

For External Threading



Sumitomo Cat. No.	STK R L	Dimensions							
		W	H	L	S	D	h	t	
BNGGR/L160	•	1	1	6	1.25	.281	1	.2	

- For use in hard threading with BNTT inserts.
- May apply various threading widths.
- **ANVIL SOLD SEPARATELY.**

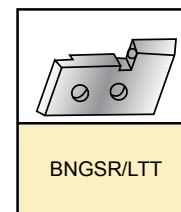
Grooving Inserts

Insert	Grade									
	BN250		BN300		BN350		BN500		BN600	
	R	L	R	L	R	L	R	L	R	L
BNGNT0200R/L	•	•	•		•		•		•	
BNGNT0250R/L	•	•	•				•		•	
BNGNT0300R/L	•	•	•		•		•		•	
BNGNT0400R/L	•	•	•		•		•		•	
BNGNT0500R/L	•	•	•				•		•	
BNGNT0600R/L	•	•	•				•		•	

Note: BNGNT inserts can be made in special widths per individual requirements. When using a special width BNGNT insert, the anvil must be altered as well. Please contact the Engineering Department for more information.

Threading Inserts

Insert	Grade	
	BN250/BN600	
	R	L
BNTT1020R/L	•	
BNTT1530R/L	•	

*** Threading Anvil***** Grooving Anvil**

BNGSR/L200
BNGSR/L250
BNGSR/L300
BNGSR/L400
BNGSR/L500
BNGSR/L600

*** Grooving Anvil Additional Widths**

BNGSR/L150
BNGSR/L350
BNGSR/L450
BNGSR/L550

Hardware for Holders

Holder Cat. No.	Clamp	Adjust. Screw	Spring	Screws	Wrenches
BNGGR/L160	BNGCR/L	FMJ	GSP06	(Clap Screw) BX0615 (Anvil Screw) BX0414	(Clap Wrench) LH050 (Anvil Wrench) LH030 1.8 X 45

Note: Holders for threading or grooving are identical, even though they have different part numbers. You may substitute one holder for the other and all hardware items are interchangeable.

* Holder and anvil assembly required

* Anvil sold separately.



80° Diamond Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		ICSN322	.500	.1875	.031
		ICSN433	.500	.1875	.047
		ICSN533	.625	.1875	.047
		ICSN633	.750	.1875	.047

55° Diamond Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		IDSN322	.375	.125	.031
		IDSN433	.500	.1875	.047
		IDSN443	.500	.250	.047
		IDSN533	.625	.1875	.047

55° Diamond Shim		Sumitomo Cat. No.	Size (mm)					
		SDW423	12.65	3.18	6.2	8.0	—	55

Round Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		IRSN43	.500	.1875	—
		IRSN44	.500	.250	—

Square Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		ISSN433	.500	.1875	.047
		ISSN443	.500	.250	.047
		ISSN533	.625	.1875	.047
		ISSN543	.625	.250	.047
		ISSN633	.750	.1875	.047
		ISSN643	.750	.250	.047

Square Shims		Sumitomo Cat. No.	Size (mm)					
		SSW423	12.65	3.18	6.2	8	—	—
		SSW433	12.65	4.76	6.2	8	—	—
		SSW534	15.85	4.76	7.8	9.7	—	—
		SSW635	19	4.76	9	11.5	—	—

Triangle Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		ITSN323	.375	.125	.047
		ITSN333	.375	.1875	.047
		ITSN423	.500	.125	.047
		ITSN432	.500	.1875	.031
		ITSN433	.500	.1875	.047
		ITSN534	.625	.1875	.0625

Triangle Shims		Sumitomo Cat. No.	Size (mm)					
		STW323	9.5	3.18	4.7	6.5	—	—
		STW333	9.5	4.76	4.7	6.5	—	—
		STW434	12.65	4.76	6.2	8	—	—
		STW534	15.85	4.76	7.8	9.7	—	—

Triangle Shims		Sumitomo Cat. No.	Size (mm)					
		STPD322	8.4	3.18	3.4	—	—	6
		STPD422	11.0	3.18	3.4	—	—	6

35° Diamond Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		IVSN322	.375	.125	.031
		IVSN432	.500	.1875	.031
		IVSN433	.500	.1875	.047

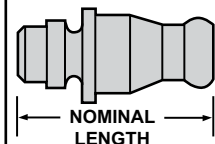
Trigon Shims		Sumitomo Cat. No.	A Insert I.C.	T	R
		IWSN322	.375	.125	.031
		IWSN433	.500	.1875	.1875

Trigon Shim		Sumitomo Cat. No.	Size (mm)					
		SWW433	12.65	4.76	6.2	8	—	—
		SWW544	15.85	5.15	7.8	9.7	—	—

Threading Shim		Sumitomo Cat. No.	Size (mm)					
		LSTE31-0	9.5	2.7	5.2	—	—	—

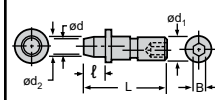


Lock Pins Negative Rake (Top & Bottom Lock)



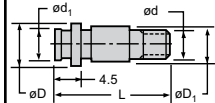
Sumitomo Cat. No.	Insert I.C.	Nominal Length	Hex Wrench	Use With Seat
BWP-46	.500	.578	.094	Yes
NL-23	.250	.328	.0625	No
NL-33	.375	.344	.078	No
NL-33L	.375	.406	.078	No
NL-34	.375	.453	.078	Yes
NL-34L	.375	.516	.078	Yes
NL-44	.500	.516	.094	No
NL-46	.500	.672	.094	Yes
NL-46L	.500	.734	.094	Yes
NL-58	.625	.859	.125	Yes
NL-68	.750	.859	.141	Yes

Cam Pin



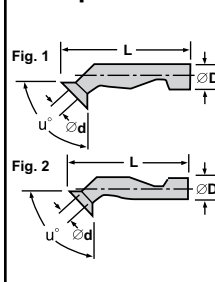
Sumitomo Cat. No.	Size (mm)					
	d	d ₁	d ₂	L	l	B
CPB33	3.4	4.1	5.5	17	3.4	2.5
CPB43	4.5	5.5	7	19	5	3
CPB43S	4.5	5.5	7	16	5	3
CPB44T	4.5	5.5	7	22	5	3

Cam Pin



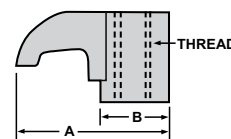
Sumitomo Cat. No.	Size (mm)					
	d	Pitch	L	D	D _i	d _i
MP416	M5	0.8	14	7.5	6	5
MP420	M5	0.8	20	7.5	6	5
MP531	M6	1.0	19.7	9.5	7	6.26
MP534	M6	1.0	26.1	9.5	7	6.76

Clamp Stud



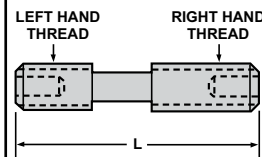
Sumitomo Cat. No.	Size (mm)				
	d	D	L	u°	Shape
SR104B	3	3.4	21	60	Fig. 1
SW43B	4	4.9	27.5	90	Fig. 2
SW42L	4	4.9	22	90	Fig. 2
SW43	4	4.9	27.5	90	Fig. 2
SW53L	4.8	5.9	28.3	90	Fig. 2
SW53R	4.8	5.9	28.3	90	Fig. 2
SW54	4.8	5.9	35.5	90	Fig. 2
SW54B	4.8	5.9	35.5	90	Fig. 2
SW64L	5.5	6.9	33.8	90	Fig. 2
SW64R	5.5	6.9	33.8	90	Fig. 2
SW65	5.5	6.9	44.5	90	Fig. 2
SW65B	5.5	6.9	44.5	90	Fig. 2

Finger Clamp



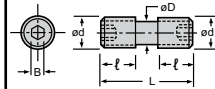
Sumitomo Cat. No.	A	Thread	B
CL19	.550	10-32	.310
CL6	.580	10-32	.310
CL7	.640	10-32	.310
CL20	.730	1/4-28	.375
CL9	.750	5/16-24	.430
CL12	.880	5/16-24	.430
CL30	1.000	5/16-24	.430

Differential Clamp Screws



Inch			
Catalog Number	Thread	L	Size
XNS35	10-32	.59	3/32
XNS36	10-32	.75	3/32
XNS47	1/4-28	.81	1/8
XNS48	1/4-28	1.00	1/8
XNS58	5/16-24	1.00	5/32
XNS59	5/16-24	1.125	5/32
XNS510	5/16-24	1.25	5/32

Differential Clamp Screw



Sumitomo Cat. No.	Size (mm)					
	d	pitch	L	l	D	B
WB613	M6	1.0	13	5	4.5	3
WB616	M6	1.0	16	6	4.5	3
WB820	M8	1.25	22	8.5	6.2	4
WB8F20	M8	1.0	20	8.5	6.2	4
WB8F30	M8	1.0	3.0	11.5	6.2	4



Torx Insert Screws	Sumitomo Cat. No.	Size (mm)					
		d	Pitch	L	D	B	α°
BFTX0204	M2	0.4	4.3	2.7	T6	60	
BFTX0204A	M2	0.4	4.3	2.7	T6	90	
BFTX02205	M2.2	0.45	4.5	3	T6	60	
BFTX02506N	M2.5	0.45	5.5	3.45	T8	60	
BFTX02507	M2.5	0.45	6.5	3.45	T8	60	
BFTX0305A	M3	0.5	5.3	4.3	T10	90	
BFTX0306A	M3	0.5	5.8	4.3	T10	90	
BFTX0307A	M3	0.5	6.8	4.3	T10	90	
BFTX03508	M3.5	0.6	8	5.1	T10	52	
BFTX0407A	M4	0.7	7.3	5.6	T15	90	
BFTX0409N	M4	0.7	9	5.6	T15	60	
BFTX0410A	M4	0.7	10.3	5.6	T15	90	
BFTX0509A	M5	0.8	9.3	6.9	T20	90	

Torx Insert Screws	Sumitomo Cat. No.	D	T	L	B
	ST21.5	.130	M2.5x.45	.217	T-8
	ST32.5	.213	M4x.7	.315	T-15

Shim Screws	Sumitomo Cat. No.	Insert I.C.	D	L	H	T
	S34	.375	.24	.31	.078	10-32
	S46	.500	.30	.50	.094	1/4-28
	S58	.625	.40	.62	.125	5/16-24
	S68	.750	.46	.62	.140	3/8-24

Torx Wrench	Sumitomo Cat. No.	Size (mm)			
		B	C	b ₁	b ₂
	TRX06	T6	34.5	15	15
	TRX08	T8	34.5	19	19
	TRX10	T10	42.5	22	22
	TRX15	T15	45	22	27
	TRX20	T20	49.0	22	30

Flat Button Head Screw	Sumitomo Cat. No.	Size (mm)					
		d	Pitch	L	D	B	α°
	BHF0203T	M2	0.4	4	3	1.5	90
	BHF0203B	M2	0.4	5.5	3.5	1.5	90
	BHF0306R	M3	0.5	6.5	4.4	2	90
	BHF0308R	M3	0.5	8	4.4	2	90

Hex Low Head Cap Screw	Sumitomo Cat. No.	Size (mm)					
		d	Pitch	L	ℓ	D	B
	BHA0625	M6	1.0	30	11.3	10.5	4
	BHA0834	M8	1.25	34.2	12.7	12	5

Cap Screw	Sumitomo Cat. No.	Size (mm)					
		d	Pitch	L	ℓ	D	B
	BX0414	M4	0.7	14	Full	7	3
	BX0512	M5	0.8	12	Full	8.5	4
	BX0615	M6	1.0	15	Full	10	5
	BX0618	M6	1.0	18	18	10	5
	BX0622	M6	1.0	22	18	10	5

Set Screw	Sumitomo Cat. No.	Size (mm)					
		d	Pitch	L	ℓ	D	B
	BTD0520	M5	0.8	10	3	3.5	2.5
	BTD0607	M6	1.0	9	2	4	3
	BTD0615	M6	1.0	15	5	4	3
	BTD0812	M8	1.25	12	2	5	4
	BTD0820	M8	1.25	20	6	5	4
	BTD0825	M8	1.25	25	8.5	5	4

Nut	Sumitomo Cat. No.	Size (mm)					
		L	—	—	—	—	—
	BNBW2	2	—	—	—	—	—
	BNBW4	5	—	—	—	—	—
	BNBW7	8	—	—	—	—	—

Nut	Sumitomo Cat. No.	Size (mm)					
		d	L	D	B	—	—
	CPM43N	M5	8.5	7	3	—	—
	CPM43S	M5	6	7	3	—	—
	CPM54N	M6	9	9	4	—	—





SUMITOMO

CARBIDE - CBN - DIAMOND

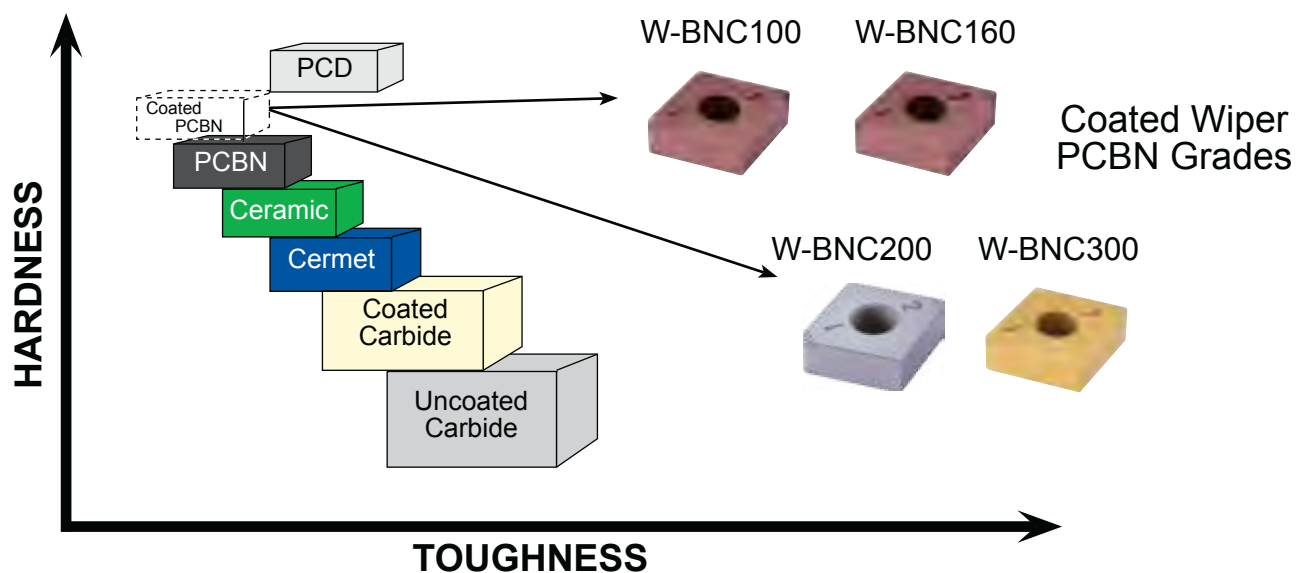
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UNCOATED CARBIDE	
C Class	
ST10P	H1
ST20E	H2
ST30E	G10E
A30N (A30)	EH510
S30E	EH520

COATED CARBIDE	
CVD	PVD
YB100	EH510Z
AC700G	EH520Z
AC2000	EH520V
AC3000	ACZ310
AC610M	AC510U
AC630M	AC520U
AC225	AC530U
AC410K	
AC820P	
AC830P	

CERMET	
Uncoated	Coated
T1200A	T2000Z*
T130A	T3000Z*
T250A	
	*ZX coating

CERAMIC	
Al ₂ O ₃	Si ₃ N ₄
NB90S	NS30
	NS260
	NS260C
Whisker-Reinforced	
WX2000	

PCBN	
Steel	Cast Iron
BNX10	BN500
BNX20	BN700
BN250	BNS800
BN300	
BN350	
BNX25	
Coated	
BNC100	
BNC160	
BNC200	
BNC300	

PCD
DA1000
DA2200
DA150
DA200
DA90



YB100, AC700G, AC2000, AC3000, AC610M, AC630M, AC300G, AC410K, AC510U, AC520U, AC530U, AC820P, AC830P

■ GENERAL DESCRIPTION

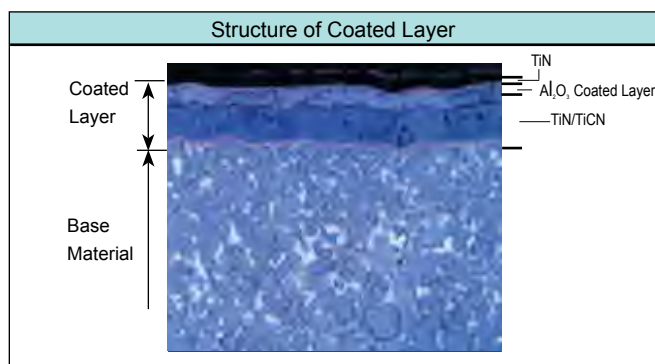
Sumitomo offers an assortment of carbide, cermet, and ceramic inserts for your turning applications. Using the latest technology of grade and chipbreaker development, Sumitomo has the ability to succeed in all applications ranging from heavy roughing to fine finishing. By offering the newest styles of coatings, substrates, and geometries, Sumitomo has become very competitive in all machining facets of the industrial markets.



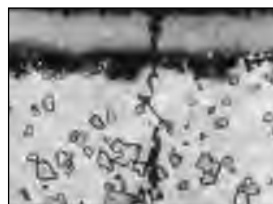
■ GRADE APPLICATION

		High Speed	C8	C7	C6	C5A	C5
STEEL	Main Grades	YB100					
		AC700G					
				AC2000			
					AC3000		
				AC610M			
					AC630M		
				AC820P			
					AC830P		
		High Speed	C4	C3	C2		
CAST IRON	Main Grades	AC410K					
		AC300G					
				AC700G			
		High Speed	C4	C3	C2		
SUPER ALLOYS	Main Grades	AC510U					
				AC520U			
					AC530U		

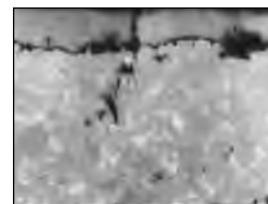
■ STRUCTURE (AC2000)



Coated Layer Defends Against Thermal Cracks



Conventional



Insert with Ace Layer

■ APPLICATIONS

YB100	→	• For interrupted cutting of cast iron • For high speed finishing of steel
AC700G	→	• For interrupted cutting of cast iron • For high speed finishing of steel
AC2000	→	• For general purpose to high speed cutting of steels and stainless steels
AC3000	→	• For interrupted and rough cutting of steels and stainless steels
AC610M	→	• For finishing of stainless steel
AC630M	→	• For general purpose machining of stainless steels
AC300G	→	• For general purpose to finishing of ductile cast iron
AC410K	→	• For continuous to light interrupted machining of gray and ductile cast iron
AC510U	→	• For finishing and medium interrupted turning of super alloys
AC520U	→	• For general purpose machining of super alloy materials
AC530U	→	• For high speed precision machining of steels and stainless steels
AC820P	→	• General purpose to roughing of steels and stainless steels
AC830P	→	• For continuous and interrupted cutting of steels and stainless steels



EH510, EH520, EH510Z, EH520Z, AC510U, AC520U, AC530U

Sumitomo Electric Carbide, Inc. has produced a new generation of grades for high temperature alloy and exotic material machining, as well as steel and stainless steel. The grades AC510U, AC520U, and AC530U have improved toughness and wear resistance to help with the most difficult applications. The super ZX coated insert edge also displays a high resistance to coating peeling.

■ APPLICATIONS

EH510	➔	• Improved wear resistance when turning exotic materials
EH520	➔	• Longer tool life for exotic material turning and milling
EH510Z	➔	• Improved wear resistance when turning exotic materials with ZX coating
EH520Z	➔	• ZX coated grade provides longer tool life for turning exotic material
AC510U	➔	• Super ZX coating for improved wear resistance when turning exotic material
AC520U	➔	• Super ZX coating for longer tool life for turning exotic material
AC530U	➔	• Super ZX coating for high stability and longer tool life for precision turning of steel and stainless steel

Cemented Carbides

Our research and development of Sumitomo Cutting Tool tungsten carbide grades started in 1927. Since then, we have improved and refined them to meet the exacting needs of today's customers.

■ APPLICATIONS

ST10P	➔	• Finishing to semi-finishing of steels
ST20E	➔	• Semi-finishing to light roughing of steels
ST30E	➔	• Heavy roughing of steels
A30N	➔	• Turning and milling of steels and stainless steels
G10E	➔	• Turning and milling of cast iron, aluminum and non-ferrous alloys
H2	➔	• Finishing of aluminum and brass materials
H1	➔	• Milling of aluminum

Cermet T1200A Coated Cermet T2000Z & T3000Z

■ CERMET SERIES FEATURES

Compared to carbide...

- ① Excellent anti-wear and anti-cratering properties
- ② Low affinity to steel; resists adhesion
- ③ Economical

Compared to coated carbide inserts...

- ① A large selection of ground, precision inserts for clean, smooth cuts
- ② Ideal for finishing cuts – light feed and depths of cut
- ③ Economical



■ GRADE FEATURES

T1200A: General purpose cermet grade which balances wear resistance with toughness

T2000Z: ZX coated cermet for finishing to semi-finishing of steels and stainless steels

T3000Z: Medium to finish interrupted machining of steel with ZX coating

	T1200A	T2000Z	T3000Z
Hardness (Hv)	1,680	1,680	1,680
T.R.S. (kg/mm ²)	165	165	165

■ APPLICATIONS

Steel Turning		C8	C7	C6	C5A-C5
	High-Speed	Finishing		General	Rough
		T1200A			
		T2000Z			
Cast Iron Turning		C4	C3	C2	C1
	High-Speed	Finishing	General		Rough
		T1200A			
		T2000Z			

T1200A


General purpose to finish turning of steels and stainless steels

T2000Z


General purpose to finishing of steels and stainless steels with ZX coating

T3000Z


Medium to finish interrupted machining of steel with ZX coating

■ GENERAL DESCRIPTION

Employing a highly refined and advanced manufacturing process, Sumitomo Electric produces superior-quality ceramic cutting tools. These highly reliable tools feature a fine grain size which produces both wear resistance and toughness.

■ FEATURES

Silicon Nitride Ceramic NS260

The ceramic grade NS260 has an extremely fine grain microstructure because of a special manufacturing process that is very pure. As result it is much more wear resistant to physical and chemical damage than the conventional grade.

Coated Silicon Nitride Ceramic NS260C

NS260C is the NS260 grade coated with Al_2O_3 and Ti compound resulting in hardness and high wear resistance.

Silicon Nitride Ceramic NS30

The ceramic grade NS30 is manufactured by a unique process which increases toughness while preserving wear resistance, creating longer tool life.

Al_2O_3 Ceramic NB90S

NB90S, which is also manufactured by a unique process, has superior wear resistance in general steel turning.

Whisker-Reinforced WX2000

WX2000 is a whisker-reinforced ceramic grade for machining super alloys. Its exceptional flank wear resistance, notch wear resistance, and toughness makes it ideal for high speed applications ranging from finishing to roughing.

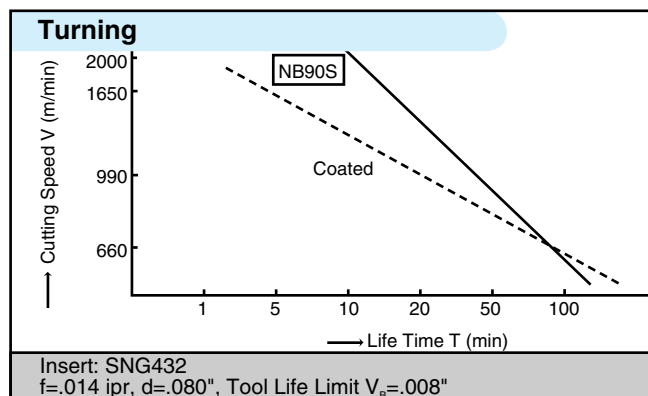


	NS260(C)	NB90S
Type	Si_3N_4	Al_2O_3
Specific Gravity	3.3	4.3
Hardness (Hv)	1,750	2,000
T.R.S. (kg/mm ²)	130	90
Fracture Toughness (MN/m ^{3/2})	8.0	4.5
Color	Gray	Black

■ APPLICATIONS

NS260	➔	Rough turning and milling of cast iron
NS260C	➔	Wet or dry continuous turning of cast iron
NS30	➔	Rough turning and milling of cast iron
NB90S	➔	High speed finish turning of hardened steels
WX2000	➔	High speed finishing to roughing of super alloy materials

■ CUTTING PERFORMANCE



Sumitomo Electric is a world leader in the development of polycrystalline diamond and PCBN cutting tool materials and their applications. For you, this means increased productivity, better surface finish, the ability to hold closer tolerances, and longer tool life. Sumitomo offers products in sizes and grades available nowhere else.

In general, polycrystalline cutting tools are recommended for machining ferrous materials that are too hard or abrasive for conventional cutting tools such as tungsten carbide, cermets, or ceramics. Cubic boron nitride is used for ferrous materials and diamond for nonferrous and nonmetal applications.

In 1977, Sumitomo successfully developed its own revolutionary CBN sintered material - SumiBoron. Manufactured under ultra-high temperature and pressure sintering of a mixture of cubic boron nitride and a special ceramic binder material. Compared to conventional tooling materials, SumiBoron exhibits higher hardness and exceptional heat resistance, allowing it machining capabilities previously accomplished only by grinding. SumiBoron also achieves excellent efficiency and longer tool life in high speed machining of cast irons.



■ CBN CLASSIFICATIONS

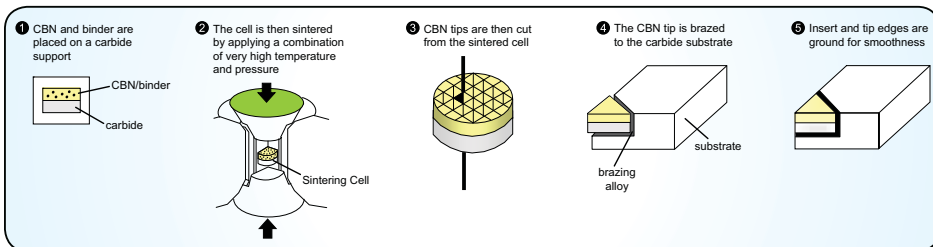
PCBN is generally classified into two groups based on its material microstructure. PCBN particles of the first type are bonded together directly. The percentage of PCBN in this type is very high, resulting in an extremely hard substrate.

SumiBoron, representative of the second type of PCBN materials, consists of PCBN particles bonded together with a ceramic binder. The bonding strength is very high, making the substrate very wear resistant and tough.

A third type of PCBN features enhancements of ceramic based coatings to new Sumitomo PCBN grades. They offer increased wear resistance as well as the ability to achieve higher speeds and superior surface finishes in a multitude of hardened steel applications.

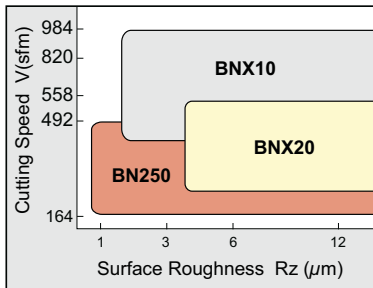
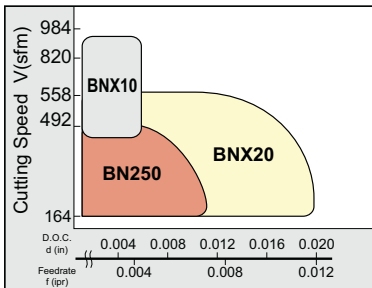
Structure	Classification	Grades	Main Application
	1) PCBN particles are bonded to each other	BN700	High speed machining of gray cast iron, powdered metals, and heat resistant alloys
		BNS800	High speed turning and milling of gray cast iron; turning of chilled iron, Ni-based iron, and ductile iron
	2) PCBN particles are bonded by a ceramic binder	BN500	Continuous and interrupted turning of nodular and gray cast iron
		BN250	Continuous to moderately interrupted cutting of hardened steels and cast iron
		BN350	Excellent performance in heavy interrupted cutting
		BNX10	High speed continuous cutting of hardened steels
		BNX20	High speed continuous cutting of hardened steels (HrC 45-68)
		BNX25	High speed interrupted cutting of hardened steels (HrC 45-68)
	3) Sintered CBN substrate with special ceramic coating	BNC100	High speed continuous and light interrupted machining of hardened steel
		BNC160	High speed continuous cutting with superior surface finish capabilities
		BNC200	High speed turning of continuous and mild interrupted hardened steels
		BNC300	Excellent performance in a wide range of interrupted hard turning

MANUFACTURING PROCESS

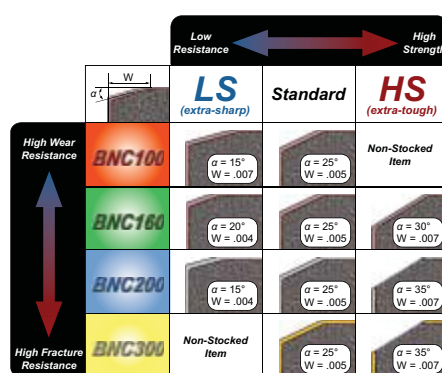
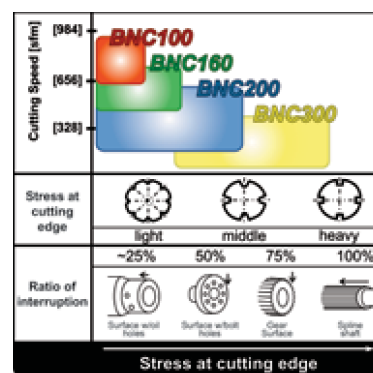
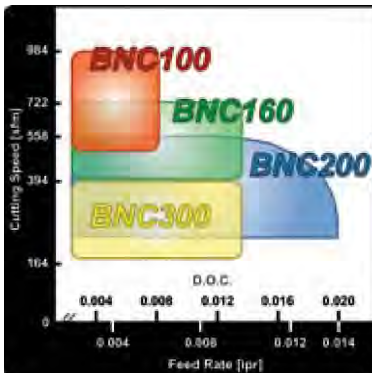


APPLICATION RANGE

Uncoated SumiBoron



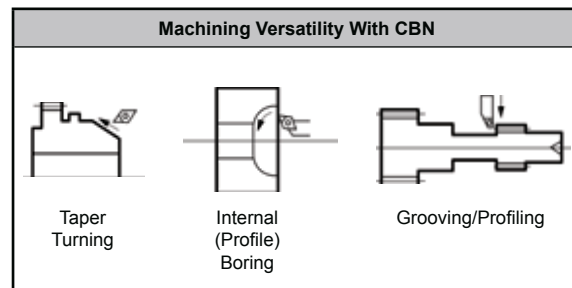
Coated SumiBoron



BENEFITS OF USING CBN

- **REDUCTION IN EQUIPMENT COST** - Lathes are generally two to three times less expensive than grinding machines.
- **INCREASE PRODUCTION CAPACITY** - Automation of turning machine centers means more parts in less time.
- **SAVE TIME** - By turning, parts with complicated shapes can be machined in one process.
- **IMPROVED QUALITY** - Turning improves part perpendicularity and concentricity because multiple operations can be performed without rechucking.
- **REDUCED SET-UP TIME** - Only simple NC program changes are needed to machine parts of different sizes.
- **REDUCTION OF INDUSTRIAL WASTE** - Turning eliminates the expense and environmental problems associated with grinding sludge.

	Benefit	Details
Cost	Facility investment is low	• Cheaper machines • Improved efficiency w/less machining required
	Profile finishing in one set-up	
Quality	Improved precision	
Waste Reduction	Less industrial waste	Sludge management vs. chip management (recyclable)



■ GRADE DESCRIPTION

Grades	Hardness (Hv)	T.R.S. (kg/mm ²)	Features	Applications
BNX10	2800 3200	80 90	• High speed wet or dry applications • Better wear and thermal shock resistance than ceramics • Improved surface finish	High speed continuous cutting of hardened steels
BN250	3200 3500	100 110	• Fine grain CBN with ceramic binder material • Very strong cutting edge • Tough and wear resistant	Continuous to moderately interrupted cutting of hardened steels and cast irons
BNX20	3200 3400	95 110	• Extremely high thermal resistant binder material • Excellent wear resistance and toughness at high cutting speeds	High speed continuous cutting of hardened steels (HrC 45-68)
BNX25	3000 3200	100 110	• Tougher CBN material • New secure brazing alloy • High reliability performance against tool breakage	High speed interrupted cutting of hardened steel (HrC 45-68)
BN300	3300 3500	110 120	• Ultra-fine grain CBN and high strength ceramic binder material • Extremely strong and sharp cutting edge	Heavy interrupted cutting of hardened steels
BN350	3300 3500	120 130	• Non coated grade • Excellent toughness • Excellent breakage resistance	Excellent performance for heavy Interrupted cutting
BN500	3300 3500	100 110	• CBN sintered with ceramic binder material • Good thermal and wear resistance	Continuous and interrupted turning of nodular and gray cast iron
BN700	4100 4400	120 130	• High CBN content • Excellent wear resistance and toughness at high cutting speeds • Milling geometries available	High speed machining of cast irons and powdered metals and heat resistant material
BNC160	3200 3400	100 110	• TiN based coating • Increased notch wear resistance • Excellent surface roughness capability • Multi-corner inserts • Numbered corners	High speed continuous cutting with the ability to achieve superior surface finishes
BNC100	3000 3300	100 110	• TiCN based coating • Heat resistant substrate • High wear resistant coating	TiCN base coated for high speed machining of hardened steels
BNC200	3400 3600	110 120	• TiAlN based coating • Excellent wear resistance and toughness at high cutting speeds • Increased flank wear resistance • Multi-cornered inserts • Numbered corners	High speed turning of continuous and mild interrupted hardened steels (HrC 45-68)
BNC300	3300 3500	120 130	• TiAlN based coating • Micro-grain CBN • High fracture toughness	Excellent performance in a wide range of interrupted hard turning
BNS800	4000 4300	100 120	• Solid CBN • High thermal resistance • Excellent fracture resistance	High speed turning and milling of gray cast iron Turning of chilled iron, nickel-based iron, and ductile iron

Multi-Corner PCBN Grade

BN350



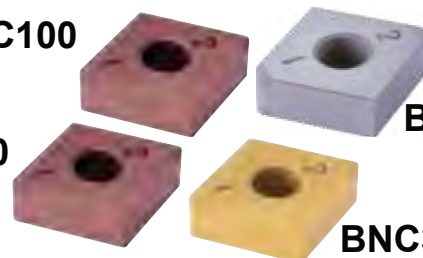
Coated PCBN Grades

BNC100

BNC160

BNC200

BNC300





Since the introduction of SUMIDIA DA polycrystalline diamond (PCD) blanks in 1978, Sumitomo has continually developed and expanded the product line to offer finished inserts in a wide range of grades, shapes and sizes. SUMIDIA inserts consist of a layer of fine grain synthetic diamond crystals bonded to a tungsten carbide substrate which is securely brazed into the pocket of a standard size insert. A high degree of diamond to diamond bonding is achieved by an ultra high pressure-temperature process. This crystal to crystal bonding provides exceptional hardness and abrasion resistance.

Our closely controlled manufacturing process produces unequaled consistency resulting in superior tool edge quality.

SUMIDIA DA inserts and wipers are replacing tungsten carbide and natural diamond cutting tools on a worldwide basis. Use of SUMIDIA DA grades will provide dramatically increased tool life, the ability to hold closer part tolerance, and improved surface finish.

New technological advances have given the industry a new style of PCD insert. The optimum size of PCD used in NF-DA2200 offers a less expensive alternative when machining non-ferrous materials.

■ GRADE DESCRIPTION

Grade	DA1000	DA2200	DA150	DA90
Average diamond crystal size (microns)	0.5	0.5	5	~ 50
Hardness (Hv)	11,000-12,000	9,000-10,000	10,000-12,000	10,000-12,000
T.R.S. (kg/mm ²)	260	250	200	115
Product Description	• Ultra-fine grain structure • Superior hardness and wear resistance with sharp edge	• High density sintered material made of ultra-micro diamond particles • Superior hardness and wear resistance with sharp edge	• Fine grain diamond • High abrasion resistance	• Coarser grain • High wear resistance
Applications	• High Silicon Aluminum • Copper • Fiberglass • Hard rubber • Graphite epoxy • Wood • Aluminum alloys (finishing, roughing, interrupted) • Plastics • Carbon	• High silicon Aluminum • Copper • Fiberglass • Hard rubber • Graphite epoxy • Wood • Aluminum alloys (finishing, roughing, interrupted)	• High silicon aluminum • Copper • Fiberglass • Hard rubber • Graphite epoxy • Wood • Carbon	• Sintered carbide • Stone or rock • High silicon aluminum • Green or semi-sintered carbide & ceramic



Sumitomo Electric has developed TME (external) and TMI (internal) threading inserts with a pitch range of 1.0 ~ 3.0 mm and 8~24 threads per inch (TPI) along with applicable LTE type and STI holders. The superior features of the TME and TMI threading inserts include an M-class tolerance and dimple shaped chipbreaker. The M-class tolerance reduces insert cost by eliminating the need for expensive grinding. Furthermore, chip control is greatly improved as a result of the specially designed dimple chipbreakers.

■ FEATURES

- A positive rake angle encourages good chip control and reduces cutting resistance.
- Two tier dimple-style chip breakers evacuate chips smoothly and easily.
- M-class tolerance reduces insert cost.
- Four available grades cover a wider range of applications.

■ INSERT GRADES & RECOMMENDED RUNNING CONDITIONS

Application

AC225 (Coated)

- For stainless and general steels
- Stable machining

T130A (Cermet)

- For soft and general steels
- Good surface finish
- Long tool life

A30 (P30 Carbide)

- For low and medium speed cutting of stainless and general steels

EH20Z (PVD Coated)

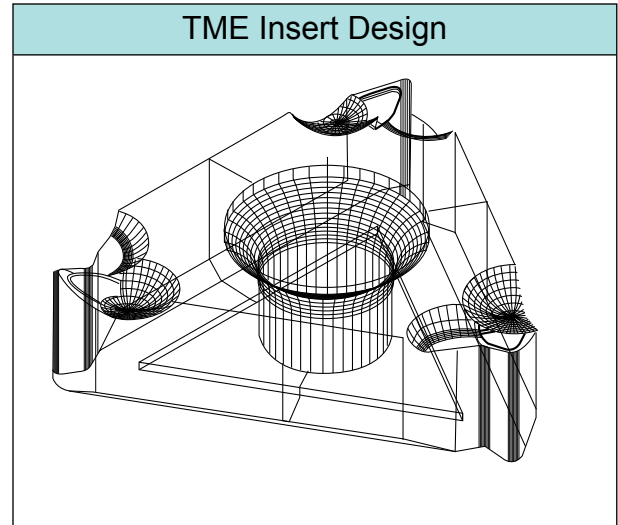
- For exotic materials

Recommended Running Conditions (SFM)

Work Material \ Insert Grade	AC225	T130A	A30	EH20Z
Soft Steel	500 ~ 660	330 ~ 500	230 ~ 400	—
Carbon Steel	330 ~ 550	260 ~ 430	230 ~ 330	—
Alloy Steel	300 ~ 500	260 ~ 400	230 ~ 330	—
Stainless Steel	230 ~ 450	—	230 ~ 330	—
Exotics	—	—	—	100 ~ 150

Trouble Shooting

- Chipping
T130A → AC225
- Excessive Wear
A30 → AC225 → T130A
- Plastic Deformation
A30 → AC225 → T130A



Recommended Infeed Values mm (inch)

Pitch (mm) \ TPI	1.0	1.25	1.5	1.75	2	2.5	3
Pass	24	19	16	14	12	9	8
1 ST	0.25 (.010)	0.25 (.010)	0.30 (.012)	0.30 (.012)	0.30 (.012)	0.35 (.014)	0.35 (.014)
2 ND	0.20 (.008)	0.20 (.008)	0.25 (.010)	0.25 (.010)	0.25 (.010)	0.30 (.012)	0.30 (.012)
3 RD	0.15 (.006)	0.15 (.006)	0.20 (.008)	0.20 (.008)	0.20 (.008)	0.25 (.010)	0.25 (.010)
4 TH	0.10 (.004)	0.15 (.006)	0.15 (.006)	0.15 (.006)	0.20 (.008)	0.20 (.008)	0.20 (.008)
5 TH	0.05 (.002)	0.10 (.004)	0.10 (.004)	0.15 (.006)	0.15 (.006)	0.20 (.008)	0.20 (.008)
6 TH	—	0.05 (.002)	0.05 (.002)	0.10 (.004)	0.12 (.005)	0.15 (.006)	0.15 (.006)
7 TH	—	—	—	0.05 (.002)	0.10 (.004)	0.15 (.006)	0.15 (.006)
8 TH	—	—	—	—	0.05 (.002)	0.10 (.004)	0.15 (.006)
9 TH	—	—	—	—	—	0.05 (.002)	0.10 (.004)
10 TH	—	—	—	—	—	—	0.10 (.004)
11 TH	—	—	—	—	—	—	0.05 (.002)

TERMS:

Thread Form – (most common shapes)

60° (UN standard, ISO) 55° (British standard) 29° (Acme standard/stub)

Pitch – Distance from the top of one thread to the next.

$\text{Pitch} = 1 \text{ (inch)} / \text{threads per inch}$, Ex: 20 TPI = $1 / 20 = .050$

T.P.I. – Number of threads per inch

$\text{TPI} = 1 \text{ (inch)} / \text{pitch}$, Ex: $1 / .050 \text{ (pitch)} = 20 \text{ tpi}$

Lead – Movement caused by one revolution of the screw.

(the same as pitch in a single start thread)

$\text{Lead} = \text{pitch} \times \text{number of starts}$

Example: double start thread with .050 pitch = .100 lead

Multi-Start Thread – Thread with more than one starting position. (lead different than pitch)

Helix angle – Angle generated by the helix of the thread at the pitch diameter.

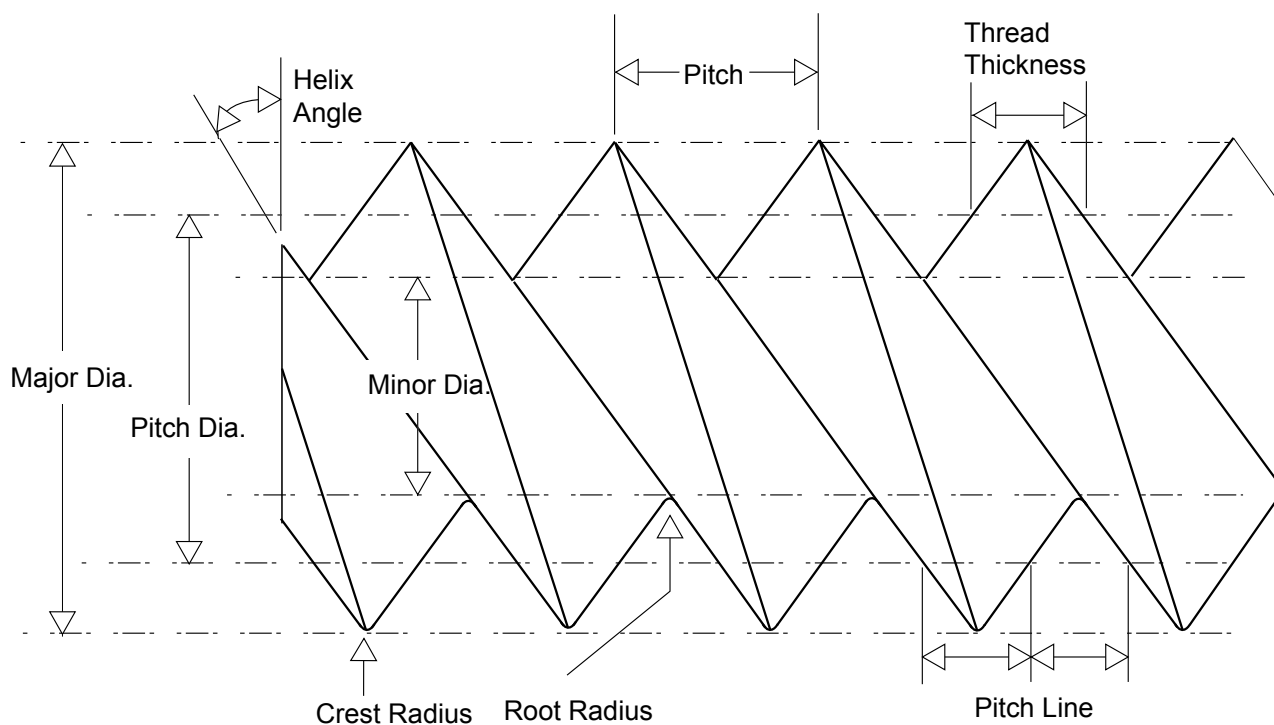
Major Diameter – see drawing below

Minor Diameter – see drawing below

Pitch Diameter – see drawing below

Pitch Line – -see drawing below

Crest and Root Radius – see drawing below



Solid Carbide Solid Quality Solid Performance

Because of the **solid tungsten carbide** support blade, Sumitomo cut-off tools are able to perform in the most demanding applications. Tungsten carbide is more rigid than steel so bending, vibration and movement at the cutting edge are all drastically reduced.

The Sumitomo solid carbide support blades fit in many existing cut-off tool blocks.

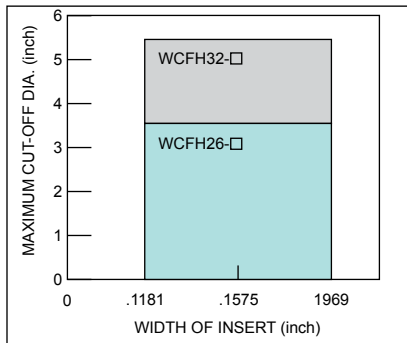
The unique positive rake inserts are available in neutral, right hand, and left hand styles. The insert design collapses the width of the chip, breaks it and facilitates chip flow away from the cut, thus

welding and wear on the insert corners are greatly reduced, and coolant is easier to direct.

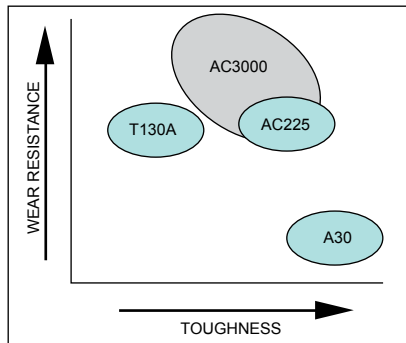
Operating at high speeds and feeds is possible because of longer tool life, and down-time for chip removal is drastically reduced.

**NOTE: Sumitomo Inserts fit only
Sumitomo Blades.**

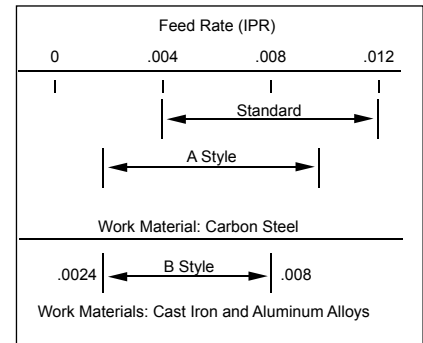
■ MAXIMUM CUT-OFF DIAMETER



■ GRADE APPLICATION RANGE



■ CHIPBREAKER RANGE



■ GRADE APPLICATION

GRADE	C.B. STYLE	APPLICATION	FEATURE
AC3000	STANDARD	Heavy feed in steel (.0032-.012 ipr)	Coated insert with excellent wear resistance. Standard chipbreaker for low cutting force applications.
AC225	A	Light feed in steel (.0016-.010 ipr) Carbon steel, stainless steel	Coated insert with excellent toughness. A style chipbreaker with good chip control.
T130A	A	Light feed in steel (.0012-.0061 ipr)	Cermet inserts produce excellent surface finish.
A30N	A	Slow speed and feed in steel	Equivalent to C5, C6 carbide.
G10E	A	For exotic materials	C2 carbide for exotic materials.
G10E	B	For cast iron and aluminum alloy	C2 carbide with a sharp cutting edge.

CAUTION 1. Do not use AC3000 for light feed rate applications (Feed rate should be at least .004 ipr)
2. Use AC225 for stainless steel.
3. Use A style chipbreaker for low carbon steel.
4. Use coolant.

■ RECOMMENDED RUNNING CONDITIONS

GRADE	V (SFM) f (ipr)	STEEL	CARBON STEEL	STAINLESS STEEL	DIE STEEL	CAST IRON	EXOTICS
AC3000	V f	320-720 .004-.012	400-820 .004-.006	260-650 .004-.006	200-500 .004-.006	—	—
AC225	V f	260-650 .0016-.010	320-750 .0016-.008	200-600 .0016-.008	200-500 .0016-.008	—	—
T130A	V f	260-650 .0012-.006	320-750 .0012-.004	200-600 .0012-.004	200-500 .0012-.0032	—	—
A30N	V f	160-400 .002-.008	230-500 .0016-.006	230-500 .0016-.006	160-400 .0016-.006	—	—
G10E	V f	—	—	—	—	160-320 .0024-.008	100-160 .002-.003

RECOMMENDED RUNNING CONDITIONS (SFM)

Material	Application	Hardness	Grade	Low	Low Opt.	High Opt.	High
INDUCTION HARDENED STEEL	Continuous	45-65 Hrc	BNX10	400	500	650	700
			BNC160	400	500	650	700
			BNX20	300	450	550	600
			BNC200	350	400	650	750
			BNC100	400	525	675	850
	Interrupted (DRY)	45-65 Hrc	BN250	300	400	550	600
			BNX25	400	550	700	750
			BN300	300	400	550	600
			BN350	300	400	550	600
			BNC300	300	400	550	600

Material	Application	Hardness	Grade	Low	Low Opt.	High Opt.	High
CARBURIZED HARDENED STEEL BEARING STEEL	Continuous	45-65 Hrc	BNX10	350	400	600	650
			BNC160	350	450	550	600
			BNX20	250	300	500	600
			BNC200	300	350	550	600
			BNC100	350	425	550	675
	Interrupted (DRY)	45-65 Hrc	BN250	300	400	550	600
			BNX25	400	550	700	750
			BN300	300	400	550	600
			BN350	300	400	550	600
			BNC300	300	400	550	600

Material	Application	Hardness	Grade	Low	Low Opt.	High Opt.	High
DIE STEEL HIGH SPEED STEEL	Continuous	55-65 Hrc	BNX10	250	300	400	500
			BNC160	250	300	400	500
			BNX20	150	200	300	450
			BNC200	200	250	350	450
			BNC100	250	300	400	500
	Interrupted (DRY)	55-65 Hrc	BN250	150	200	250	300
			BNX25	300	400	500	550
			BN300	150	200	250	300
			BN350	150	200	250	300
			BNC300	200	250	300	350

FEED RATE

FEED RATE (IPR)		
Finishing	General Purpose	Roughing
0.002 - 0.004	0.004 - 0.006	0.006 - 0.008

Note: Use above speeds for threading and grooving applications.
The recommended feed rate for grooving is 0.001 - 0.002 IPR, while your threading feed rate should be based upon the thread form, but not to exceed 0.006 IPR.

Grade	General Running Parameters* (SFM)			
	Low	Low Opt.	High Opt.	High
BNX10	400	450	650	700
BNC160	400	450	650	720
BNX20	250	400	600	650
BNC200	200	350	650	820
BN250	200	250	400	500
BNX25	450	500	650	700
BN300	200	300	500	550
BN350	200	300	500	550
BNC100	400	525	675	850
BNC300	200	250	400	500

* The above are a general range of running parameters based on grade and material.
Please contact your local Sumitomo Sales Representative or the Sumitomo Engineering Department to obtain more application specific running parameters.

Note: Running wiper inserts at the above feed rates will produce a higher quality surface finish when compared to a non-wiper insert.

DEPTH OF CUT

Mini-Tip (NU, NS, NC)	D.O.C. ≤ 0.015"
Medium-Tip (MD)	D.O.C. ≤ 0.020"
Full-Tip	D.O.C. ≤ 0.020"

Note: Depth of cut per pass



Higher feed rates are attainable with wiper inserts while maintaining the same quality of surface finish as a non-wiper insert.



RECOMMENDED RUNNING CONDITIONS (SFM)

Material	Application	Grade	Low	Low Opt.	High Opt.	High
GRAY CAST IRON	Continuous & Interrupted	BN500	800	1000	1750	2300
		BN250	600	850	1200	1500
		BNS800	1500	2000	5500	6000
		BN700	1500	2000	5500	6000

Material	Application	Grade	Low	Low Opt.	High Opt.	High
NODULAR CAST IRON 150 - 300 HBn	Continuous & Interrupted	BN500	500	650	1300	1500

Material	Application	Grade	Low	Low Opt.	High Opt.	High
AUSTEMPERED DUCTILE IRON	Continuous & Interrupted	BN500	300	450	600	900

Material	Application	Grade	Low	Low Opt.	High Opt.	High
POWDERED METAL	Continuous & Interrupted	BN700	400	550	800	1000

Material	Application	Grade	Low	Low Opt.	High Opt.	High
CHILLED CAST IRON	Continuous & Interrupted	BNX20	100	150	250	300
		BN250	100	150	250	300
		BN700	100	150	250	300
		BNS800	400	450	650	800

FEED RATE

FEED RATE (IPR)		
Finishing	General Purpose	Roughing
0.002 - 0.004	0.004 - 0.006	0.006 - 0.008

Note: Use above speeds for threading and grooving applications.

The recommended feed rate for grooving is 0.001 - 0.002 IPR, while your threading feed rate should be based upon the thread form, but not to exceed 0.006 IPR.

Grade	General Running Parameters* (SFM)			
	Low	Low Opt.	High Opt.	High
BN500	500	800	1500	2000
BNS800	2000	3000	5000	6000
BN700	2000	3000	5000	6000

* The above are a general range of running parameters based on grade and material.

Please contact your local Sumitomo Sales Representative or the Sumitomo Engineering Department to obtain more application specific running parameters.

Coolant should not be used for any interrupted cutting when using PCBN tools

DEPTH OF CUT

Mini-Tip (NU, NS, NC)	D.O.C. ≤ 0.020"
Medium-Tip (MD)	D.O.C. ≤ 0.040"
Full-Tip	D.O.C. ≤ 0.040"
Solid CBN**	D.O.C. ≤ 0.150"

** Depth of cut based on gray cast iron material. For chilled iron, depth of cut should not exceed 0.080".



PCD APPLICATIONS

■ RECOMMENDED RUNNING CONDITIONS

Material	SFM	IPR	D.O.C	Grade Recommendation		
				First	Second	Third
Aluminum Alloys (4% - 8% Si)	3,000 - 10,000	0.004 - 0.025	0.120"	DA1000	DA2200	DA150
Aluminum Alloys (9% - 14% Si)	2,000 - 8,000	0.004 - 0.020	0.120"	DA1000	DA2200	DA150
Aluminum Alloys (15% - 18% Si)	1,000 - 2,300	0.004 - 0.015	0.120"	DA1000	DA2200	DA150
Copper Alloy	3,300	0.002 - 0.008	0.120"	DA1000	DA2200	DA150
Hard Plastic	3,300	0.004 - 0.012	0.080"	DA1000	DA2200	DA150
Wood & Composite	13,000	0.004 - 0.015	-	DA1000	DA2200	DA150
Tungsten Carbide	30 - 70	0.003 - 0.008	0.020"	DA90	DA150	-
Reinforced Plastics	3,300	0.016	0.080"	DA1000	DA2200	DA150

Note: The above running parameters are for turning applications only.



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.008 IPR .005"~.060" D.O.C.	Gen. Purpose .008~.020 IPR .040"~.200" D.O.C.	Roughing .015~.028 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
LOW CARBON STEELS 1005,1006,1008,1009,1010,1011,1012,1013,1015,1016,1017,1018,1019,1020,1021,1022,1023,1025,1026,1029,1108,1109,1110,1115,1116,1117,1118,1119,1211,1212,1213,1215,1513,1518,1522	<250				
		T1200A	800~1500	800~1300	—
		T2000Z	800~1600	800~1400	—
		YB100	800~1600	800~1400	700~1100
		AC700G	800~1500	800~1300	700~1000
		AC2000	500~1200	500~1000	400~900
		AC3000	—	500~900	400~850
		AC820P	500~1200	500~1000	400~900
		AC830P	—	500~900	400~850
	220~350	T1200A	700~1200	700~1100	—
		T2000Z	700~1300	700~1200	—
		YB100	700~1300	700~1200	600~1050
		AC700G	700~1200	700~1100	600~950
		AC2000	500~1000	500~900	400~800
		AC3000	—	500~800	400~750
		AC820P	500~1000	500~900	400~800
		AC830P	—	500~800	400~750
	HRc 35~55	T1200A	400~600	400~550	—
		T2000Z	400~700	400~650	—
		YB100	400~700	400~650	350~650
		AC700G	400~600	400~550	350~550
		AC2000	300~500	300~450	300~450
		AC3000	250~450	200~400	200~400
		AC820P	300~500	300~450	300~450
		AC830P	250~450	200~400	200~400
		NB90S	1000~1400	—	—
LOW/MEDIUM CARBON STEEL—LEADED 10L18, 10L45, 10L50, 11L17, 11L37, 11L41, 11L44, 12L13, 12L14, 12L15	<250	T1200A	1000~1500	1000~1400	—
		T2000Z	1000~1600	1000~1500	—
		YB100	1000~1600	1000~1500	900~1400
		AC700G	1000~1500	1000~1400	900~1300
		AC2000	800~1400	750~1300	600~1100
		AC3000	—	750~1200	650~1000
		AC820P	800~1400	750~1300	600~1100
		AC830P	—	750~1200	650~1000
	250~350	T1200A	900~1200	800~1100	—
		T2000Z	900~1300	800~1200	—
		YB100	900~1300	800~1200	700~1100
		AC700G	900~1200	800~1100	700~1000
		AC2000	800~1000	700~900	650~900
		AC3000	—	700~900	650~900
		AC820P	800~1000	700~900	650~900
		AC830P	—	700~900	650~900
	Chipbreaker preference		EFA/ESP ESU/ESX	EUX/EGE EGU/EMU	EMU/EMX



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.060" D.O.C.	Gen. Purpose .010~.020 IPR .060"~.200" D.O.C.	Roughing .015~.026 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
MEDIUM CARBON STEELS 1030, 1033, 1035, 1037, 1038, 1039, 1040, 1042, 1043, 1044, 1045, 1046, 1049, 1050, 1053, 1055, 1132, 1137, 1139, 1140, 1141, 1144, 1145, 1146, 1151, 1524, 1525, 1526, 1527, 1536, 1541, 1547, 1548, 1551, 1552	<250				
		T1200A	900~1300	900~1200	—
		T2000Z	900~1400	900~1300	—
		YB100	900~1400	900~1300	800~1100
		AC700G	900~1300	900~1200	800~1000
		AC2000	800~1000	500~900	450~800
		AC3000	—	500~800	400~700
		AC820P	800~1000	500~900	450~800
		AC830P	—	500~800	400~700
	250~ 350	T1200A	800~1200	700~1100	—
		T2000Z	800~1300	700~1200	—
		YB100	800~1300	700~1200	600~1100
		AC700G	800~1200	700~1100	600~1000
		AC2000	600~1000	500~900	450~950
		AC3000	—	500~850	400~800
		AC820P	600~1000	500~900	450~950
		AC830P	—	500~850	400~800
	HRc 36~55	T1200A	600~900	400~800	—
		T2000Z	600~1000	400~900	—
		YB100	500~1000	400~850	350~800
		AC700G	500~900	400~750	350~700
		AC2000	400~750	350~700	300~550
		AC3000	—	350~600	300~500
		AC820P	400~750	350~700	300~550
		AC830P	—	350~600	300~500
		NB90S	1000~1400	—	—
	Chipbreaker preference		EFA/ESP ESU/ESX	EUX/EGE EGU/EMU	EMX/EMU
MEDIUM/HIGH CARBON STEELS— LEADED 41L30, 41L40, 41L45, 41L47, 41L50, 43L40, 41L50, 43640, 51L32, 52L100, 86L20, 86L40	~250	T1200A	800~1400	800~1300	—
		T2000Z	800~1500	800~1400	—
		YB100	800~1500	800~1400	700~1200
		AC700G	800~1400	800~1300	700~1100
		AC2000	800~1200	700~1000	600~900
		AC3000	—	650~950	550~800
		AC820P	800~1200	700~1000	600~900
		AC830P	—	650~950	550~800
		Chipbreaker preference	EFA/ESP ESU/ESX	EUX/EGE EGU/EMU	EMX/EMU



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.060" D.O.C.	Gen. Purpose .010~.020 IPR .060"~.200" D.O.C.	Roughing .015~.026 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
MEDIUM/HIGH CARBON STEELS– LEADED cont. 41L30, 41L40, 41L45, 41L47, 41L50, 43L40, 41L50, 43640, 51L32, 52L100, 86L20, 86L40	250~ 350	T1200A	800~1300	750~1200	–
		T2000Z	800~1400	750~1300	–
		YB100	800~1400	750~1300	650~1100
		AC700G	800~1300	750~1200	650~1000
		AC2000	700~1100	650~1000	550~900
		AC3000	–	600~1000	500~800
		AC820P	700~1100	650~1000	550~900
		AC830P	–	600~1000	500~800
ALLOY STEELS– MEDIUM CARBON 1340, 1345, 4042, 4047, 4140, 4142, 4145, 4147, 4340, 50B40, 40B44, 5046, 50B46, 5140, 5145, 5147, 81B45, 8640, 8642, 8645, 86B45, 8740, 8742 4150, 4161, 50B50, 4060, 50B60, 5150, 5155, 5160, 51B60, 6150, 8650, 8655, 8660, 9254, 9255, 9260 1330, 1335, 4027, 4028, 4032, 4037, 45130, 4135, 4137, 4427, 4626, 5130, 5132, 5135, 8620, 8625, 8627, 8630, 8633, 94B30	<250	T1200A	700~1100	700~1000	–
		T2000Z	700~1200	700~1100	–
		YB100	700~1200	700~1100	500~900
		AC700G	700~1100	700~1000	500~800
		AC2000	600~950	500~850	450~800
		AC3000	–	500~800	400~700
		AC820P	600~950	500~850	450~800
		AC830P	–	500~800	400~700
	250~ 350	T1200A	600~1000	600~900	–
		T2000Z	600~1100	600~1000	–
		YB100	600~1100	600~1000	–
		AC700G	600~1000	600~900	–
		AC2000	500~900	450~800	400~750
		AC3000	–	400~750	300~700
		AC820P	500~900	450~800	400~750
		AC830P	–	400~750	300~700
	HRc 36-50	T1200A	300~600	300~500	–
		T2000Z	300~700	300~600	–
		YB100	300~700	300~600	200~600
		AC700G	300~600	300~500	200~500
		AC2000	250~500	200~450	150~400
		AC3000	250~400	200~400	150~400
		AC820P	250~500	200~450	150~400
		AC830P	250~400	200~400	150~400
	Chipbreaker preference	NB90S	500~900	–	–
			EFA/ESP ESU/ESX	EUX/EGE EGU/EMU	EMX/EMU



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.060" D.O.C.	Gen. Purpose .010~.020 IPR .060"~.200" D.O.C.	Roughing .015~.026 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
HIGH CARBON STEELS 50100, 51100 52100, M-50	<250	T1200A	800~1200	700~1100	—
		T2000Z	800~1300	700~1200	—
		YB100	800~1250	700~1150	600~1000
		AC700G	800~1150	700~1050	600~900
		AC2000	450~850	300~750	300~700
		AC3000	—	300~750	300~650
		AC820P	450~850	300~750	300~700
		AC830P	—	300~750	300~650
	250~ 350	T1200A	700~1100	600~1000	—
		T2000Z	700~1200	600~1100	—
		YB100	700~1150	600~1100	500~800
		AC700G	700~1050	600~1000	500~700
		AC2000	550~850	500~750	400~650
		AC3000	—	450~700	400~600
		AC820P	550~850	500~750	400~650
		AC830P	—	450~700	400~600
	HRc 36~50	T1200A	400~800	300~700	—
		T2000Z	400~900	300~800	—
		YB100	350~850	300~750	200~650
		AC700G	350~750	300~650	200~550
		AC2000	350~600	200~500	200~450
		AC3000	—	200~600	200~500
		AC820P	350~600	200~500	200~450
		AC830P	—	200~600	200~500
		NB90S	500~1000	—	—
TOOL STEELS DIE STEELS	<250	T1200A	500~750	350~700	—
		T2000Z	500~850	350~800	—
		YB100	500~900	350~800	300~750
		AC700G	500~800	350~700	300~650
		AC2000	400~700	350~650	300~600
		AC3000	—	350~650	300~600
		AC820P	400~700	350~650	300~600
		AC830P	—	350~650	300~600
	Chipbreaker preference		EFA/ESU/ESX	EUX/EGE EGU/EMU	EMX/EMU



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.060" D.O.C.	Gen. Purpose .010~.020 IPR .060"~.200" D.O.C.	Roughing .015~.026 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
TOOL STEELS DIE STEELS cont.	250~ 350	T1200A	650~900	450~850	—
		T2000Z	500~800	350~800	—
		YB100	500~900	450~800	350~750
		AC700G	500~800	450~700	350~650
		AC2000	400~750	400~650	300~600
		AC3000	—	300~650	200~600
		AC820P	400~750	400~650	300~600
		AC830P	—	300~650	200~600
	HRc 36~50	T1200A	350~500	300~450	—
		T2000Z	300~550	200~500	—
		YB100	300~600	200~500	200~500
		AC700G	300~500	200~400	200~400
		AC2000	200~400	200~350	150~300
		AC3000	200~400	200~350	150~300
		AC820P	200~400	200~350	150~300
		AC830P	200~400	200~350	150~300
		NB90S	300~600	—	—
HIGH STRENGTH STEELS 300M, 4340, 4340M 4340V, H13, H11	250~ 300	T1200A	600~900	450~800	—
		T2000Z	550~950	450~850	—
		YB100	500~950	350~850	300~700
		AC700G	500~850	350~750	300~600
		AC2000	400~700	350~700	300~650
		AC3000	—	350~700	300~600
		AC820P	400~700	350~700	300~650
		AC830P	—	350~700	300~600
	300~ 350	T1200A	550~800	350~750	—
		T2000Z	500~900	350~850	—
		YB100	500~900	350~850	300~800
		AC700G	500~800	350~750	300~700
		AC2000	400~800	300~700	250~650
		AC3000	—	300~650	250~600
		AC820P	400~800	300~700	250~650
		AC830P	—	300~650	250~600
	HRc 35~45	T1200A	300~550	250~500	—
		T2000Z	300~600	250~600	—
		YB100	300~600	250~500	250~500
		AC700G	300~500	250~400	250~400
		AC2000	250~450	200~350	150~300
		AC3000	—	200~350	150~300
		AC820P	250~450	200~350	150~300
		AC830P	—	200~350	150~300
		NB90S	300~600	—	—
	Chipbreaker preference		EFA/ESP ESU/ESX	EUX/EGE EGU/EMU	EMU/EMX



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.010 IPR .005"~.060" D.O.C.	Gen. Purpose .008~.016 IPR .040"~.150" D.O.C.	Roughing .010~.020 IPR .120"~.250" D.O.C.
			CUTTING SPEED (SFM)		
STAINLESS STEEL 300 SERIES AUSTENITIC	160~ 280	T1200A	350~750	300~600	—
		T2000Z	300~800	300~700	—
		AC510U	400~900	450~850	—
		AC520U	—	400~800	300~700
		EH510	350~650	350~550	—
		EH520	—	325~525	300~500
		EH510Z	400~900	450~850	—
		EH520Z	—	400~800	300~700
		YB100	450~750	400~700	—
		AC700G	450~650	400~600	—
		AC2000	—	300~600	300~550
		AC3000	—	250~600	200~550
		AC820P	—	300~600	300~550
		AC830P	—	250~600	200~550
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	Chipbreaker preference		ESP/ESU/ESX	EUP/EGE EEX/EGU	EMU/EHP
STAINLESS STEEL 400 SERIES MARTENSITIC	160~ 260	T1200A	300~750	300~650	—
		T2000Z	300~850	300~750	—
		AC510U	—	450~850	—
		AC520U	400~900	400~800	300~700
		EH510	—	350~550	—
		EH520	350~650	325~525	300~500
		EH510Z	—	450~850	—
		EH520Z	400~900	400~800	300~700
		YB100	—	400~700	—
		AC700G	450~750	400~600	—
		AC2000	450~650	300~600	300~550
		AC3000	—	250~600	200~550
		AC820P	450~650	300~600	300~550
		AC830P	—	250~600	200~550
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	Chipbreaker preference		ESP/ENK/ESU	EEX/EGE EGU/EMU	EMU/EMX/EHP



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.010 IPR .005"~.060" D.O.C.	Gen. Purpose .008~.016 IPR .040"~.150" D.O.C.	Roughing .010~.020 IPR .120"~.250" D.O.C.
			CUTTING SPEED (SFM)		
STAINLESS STEEL 400 SERIES MARTENSITIC cont.	260~ 380		CUTTING SPEED (SFM)		
		T1200A	200~600	200~550	—
		T2000Z	200~700	200~650	—
		AC510U	400~800	400~750	—
		AC520U	—	300~800	300~700
		EH510	300~600	300~600	—
		EH520	—	300~550	250~500
		EH510Z	400~800	400~750	—
		EH520Z	—	300~800	300~700
		YB100	350~800	250~750	—
		AC700G	350~700	250~650	—
		AC2000	—	200~600	200~600
		AC3000	—	200~600	200~600
		AC820P	—	200~600	200~600
		AC830P	—	200~600	200~600
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	HrC 36~46	T1200A	200~600	200~500	—
		T2000Z	200~700	200~650	—
		AC510U	300~600	250~600	—
		AC520U	—	250~600	250~600
		EH510	200~500	200~450	—
		EH520	—	200~450	200~400
		EH510Z	300~600	250~600	—
		EH520Z	—	250~600	250~600
		YB100	200~750	200~700	—
		AC700G	200~650	200~600	—
		AC2000	—	200~550	200~500
		AC3000	—	200~550	200~500
		AC820P	—	200~550	200~500
		AC830P	—	200~550	200~500
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	Chipbreaker preference		ESP/ENK ESU/ESX	EEX/EGE EGU/EMU	EMU/EMX/EHP



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.008 IPR .005"~.060" D.O.C.	Gen. Purpose .008~.016 IPR .040"~.150" D.O.C.	Roughing .010~.020 IPR .120"~.250" D.O.C.
			CUTTING SPEED (SFM)		
STAINLESS STEEL PRECIPITATION HARDENING 15-5PH, 16-6PH, 17-4, 17-7PH, 13-8 Mo	160~ 260	T1200A	300~800	250~700	—
		T2000Z	300~900	250~750	—
		AC510U	400~900	350~850	—
		AC520U	—	400~800	400~750
		EH510	350~700	325~600	—
		EH520	—	300~650	250~550
		EH510Z	400~900	350~850	—
		EH520Z	—	400~800	400~750
		YB100	400~900	400~800	—
		AC700G	400~800	400~700	—
		AC2000	300~750	300~650	300~600
		AC3000	—	300~650	300~600
		AC820P	300~750	300~650	300~600
		AC830P	—	300~650	300~600
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	25~ 36	T1200A	200~700	200~600	—
		T2000Z	200~650	200~600	—
		AC510U	300~850	300~800	—
		AC520U	—	300~700	300~600
		EH510	250~450	250~400	—
		EH520	—	250~450	250~425
		EH510Z	300~850	300~800	—
		EH520Z	—	300~700	300~600
		YB100	300~800	250~750	—
		AC700G	300~700	250~650	—
		AC2000	300~600	200~600	200~550
		AC3000	—	200~600	200~500
		AC820P	300~600	200~600	200~550
		AC830P	—	200~600	200~500
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	36~ 46	T1200A	200~450	200~400	—
		T2000Z	200~550	200~500	—
		AC510U	300~650	300~650	—
		AC520U	—	300~625	250~600
		EH510Z	300~650	300~650	—
		EH520Z	—	300~625	250~600
		YB100	200~750	200~650	—
		AC700G	200~650	200~550	—
		AC2000	200~550	200~525	200~500
		AC3000	—	200~500	200~450
		AC820P	200~550	200~525	200~500
		AC830P	—	200~500	200~450
		AC610M	400~700	400~650	400~600
		AC630M	200~650	200~600	200~550
	Chipbreaker preference		EFA/ESP ESU/ENK	EGU/EGE EEX/EUP	EMU/EMX



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.008 IPR .005"~.040" D.O.C.	Gen. Purpose .006~.016 IPR .040"~.150" D.O.C.	Roughing .010~.020 IPR .120"~.200" D.O.C.
			CUTTING SPEED (SFM)		
STAINLESS STEEL WROUGHT AUSTENITIC NITRONIC 32 NITRONIC 33 NITRONIC 40 NITRONIC 50 NITRONIC 60	250~	T1200A	200~600	200~550	—
		T2000Z	200~700	200~650	—
		EH510/520	250~600	200~500	150~400
		AC510U	200~750	200~750	300~700
		AC520U	200~750	200~700	200~700
		EH510Z	200~750	200~750	300~700
		EH520Z	200~750	200~700	200~700
		YB100	300~850	250~750	250~750
		AC700G	300~750	250~650	250~650
		AC2000	300~600	200~600	200~600
		AC3000	300~700	200~600	300~600
		AC820P	300~600	200~600	200~600
		AC830P	300~700	200~600	300~600
		AC300G	200~650	200~600	200~600
	Chipbreaker preference		ESU/ENK ESX/EEEX	EUP/EGE/EEEX	EMU/EHP
HIGH TEMP. ALLOYS <i>Nickel Base, Wrought</i> Haynes Alloy 263 Incoloy Alloy 901, 903 Inconel Alloy 617, 625, 702, 706, 718, 721, 722, X-750, 751, M252 Nimonic 75, 80 Waspaloy	200~ 300	EH510/520	50~150	30~130	30~100
		AC510U	100~195	80~170	40~130
		AC520U	100~195	80~170	40~130
		EH510Z	100~195	80~170	40~130
		EH520Z	100~195	80~170	40~130
	300~ 400	EH510/520	40~130	30~110	30~90
		AC510U	90~170	70~150	30~120
		AC520U	90~170	70~150	30~120
		EH510Z	90~170	70~150	30~120
		EH520Z	90~170	70~150	30~120
<i>Nickel Base, Wrought</i> Hastelloy Alloy	140~ 220	EH510/520	100~190	80~150	70~130
		AC510U	120~230	90~190	80~170
		AC520U	120~230	90~190	80~170
		EH510Z	120~230	90~190	80~170
		EH520Z	120~230	90~190	80~170
<i>Nickel Base, Wrought</i> Incoloy Alloy 804, 825 Inconel Alloy 600, 601 Refractaloy 26	240~ 310	EH510/520	60~140	50~130	40~110
		AC510U	80~180	60~150	50~140
		AC520U	80~180	60~150	50~140
		EH510Z	80~180	60~150	50~140
		EH520Z	80~180	60~150	50~140
<i>Nickel Base, Cast</i> Hastalloy Alloy	200~ 375	EH510/520	60~130	40~120	30~100
		AC510U	70~170	50~150	40~130
		AC520U	70~170	50~150	40~130
		EH510Z	70~170	50~150	40~130
		EH520Z	70~170	50~150	40~130
	Chipbreaker preference		ESU/EUP/EEEX	EUP/EGE EEX/EGU	EMU



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.008 IPR .005"~.060" D.O.C.	Gen. Purpose .006~.012 IPR .040"~.120" D.O.C.	Roughing .010~.018 IPR .100"~.180" D.O.C.
			CUTTING SPEED (SFM)		
HIGH TEMP ALLOYS <i>Iron Base, Wrought</i> A-286 Discaloy Incoloy Alloy 800, 800H, Incoloy Alloy 801, 802 N-155, V-57, W-545 16-25-6, 19-9DL	180~ 230	EH510/520	100~180	90~170	80~140
		AC510U	120~220	100~200	80~180
		AC520U	120~220	100~200	80~180
		EH510Z	120~220	100~200	80~180
		EH520Z	120~220	100~200	80~180
	250~ 320	EH510/520	100~170	80~150	65~125
		AC510U	120~210	90~190	75~160
		AC520U	120~210	90~190	75~160
		EH510Z	120~210	90~190	75~160
		EH520Z	120~210	90~190	75~160
<i>Cobalt Base</i>		EH510/520	90~170	90~150	70~130
		AC510U	110~210	100~180	80~160
		AC520U	110~210	100~180	80~160
		EH510Z	110~210	100~180	80~160
		EH520Z	110~210	100~180	80~160
Stellite		EH510/520	100~170	90~155	70~120
		AC510U	110~200	100~170	80~150
		AC520U	110~200	100~170	80~150
		EH510Z	110~200	100~170	80~150
		EH520Z	110~200	100~170	80~150
Pure Titanium		EH510/520	90~160	80~130	70~125
		AC510U	100~190	90~170	80~140
		AC520U	100~190	90~170	80~140
		EH510Z	100~190	90~170	80~140
		EH520Z	100~190	90~170	80~140
Titanium Alloy Ti-6Al-4V		EH510/520	100~180	90~160	70~140
		AC510U	120~210	120~190	100~160
		AC520U	120~210	120~190	100~160
		EH510Z	120~210	120~190	100~160
		EH520Z	120~210	120~190	100~160
	Chipbreaker preference		ESU/EUP/EEX	EUP/ENG/EEX	EMU
ALUMINUM ALLOYS BRASS ALLOYS		DA2200*	1000~10000	1000~10000	—
		DA150*	1000~10000	1000~10000	—
		EH510/520	800~1700	700~1400	700~1200
		G10E	800~1500	700~1600	700~1600
	Chipbreaker preference		ESU/EUP/EEX	EUP/EEX	EMU

* Refer to the PCD section for proper running conditions of PCD grades.



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.100" D.O.C.	Gen. Purpose .010~.020 IPR .100"~.200" D.O.C.	Roughing .015~.030 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
COPPER ALLOYS WROUGHT 145, 147, 173, 187, 191, 314, 316, 330, 332, 335, 340, 342, 349, 350, 353, 356, 360, 365, 366, 367, 368, 370, 377, 385, 482, 485, 544, 623, 624, 638, 642, 782		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	800~1300	800~1200	700~1100
		AC510U	1200~1700	1100~1500	900~1300
		AC520U	1200~1700	1100~1500	900~1300
		EH510Z	1200~1700	1100~1500	900~1300
		EH520Z	1200~1700	1100~1500	900~1300
		G10E	800~1100	800~1000	700~900
190, 226, 230, 240, 260, 268, 270, 280, 425, 435, 442, 443, 444, 445, 464, 465, 466, 467, 613, 618, 630, 632, 651, 655, 667, 675, 687, 694, 770		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	800~1100	600~950	500~850
		AC510U	900~1300	800~1150	700~1000
		AC520U	900~1300	800~1150	700~1000
		EH510Z	900~1300	800~1150	700~1000
		EH520Z	900~1300	800~1150	700~1000
		G10E	800~900	600~750	500~650
101, 102, 104, 105, 107, 109, 110, 111, 113, 114, 752, 754, 757, 115, 116, 119, 120, 121, 122, 125, 127, 128, 129, 130, 142, 143, 150, 155, 162, 165, 170, 172, 175, 182, 174, 185, 189, 192, 194, 195, 210, 220		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	250~550	200~500	150~450
		AC510U	450~750	350~650	300~600
		AC520U	450~750	350~650	300~600
		EH510Z	450~750	350~650	300~600
		EH520Z	450~750	350~650	300~600
		G10E	250~350	200~300	150~250
411, 413, 505, 512, 511, 521, 524, 608, 610, 614, 619, 625, 674, 688, 706, 710, 715, 7285, 745		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	250~550	200~500	150~450
		AC510U	450~750	350~650	300~600
		AC520U	450~750	350~650	300~600
		EH510Z	450~750	350~650	300~600
		EH520Z	450~750	350~650	300~600
		G10E	250~350	200~300	150~250
	Chipbreaker preference		EUP/EEX	EUP/EEX	EMU

* Refer to the PCD section for proper running conditions of PCD grades.



Recommended first choice, Recommended second choice, Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.100" D.O.C.	Gen. Purpose .010~.020 IPR .100"~.200" D.O.C.	Roughing .015~.030 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
COPPER ALLOYS, CAST 834, 836, 938, 842, 844, 848, 852, 8545, 8955, 857, 858, 864, 867, 879, 928, 932, 934, 935, 937, 938, 939, 943, 944, 945, 953, 954, 956, 973, 974, 976, 078		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	1000~1400	850~1250	750~1150
		AC510U	1200~1600	1050~1500	950~1400
		AC520U	1200~1600	1050~1500	950~1400
		EH510Z	1200~1600	1050~1500	950~1400
		EH520Z	1200~1600	1050~1500	950~1400
		G10E	1000~1200	850~1050	750~950
817, 821, 833, 853, 861, 862, 865, 888, 872, 874, 875, 876, 878, 903, 905, 915, 9022, 923, 9059, 926, 927, 947, 948, 952, 955, 957, 958		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	700~1100	550~850	500~800
		AC510U	950~1350	700~1100	650~1050
		AC520U	950~1350	700~1100	650~1050
		EH510Z	950~1350	700~1100	650~1050
		EH520Z	950~1350	700~1100	650~1050
		G10E	700~900	550~650	500~600
801, 803, 805, 807, 809, 811, 813, 814, 815, 818, 820, 822, 824, 825, 826, 827, 828, 863, 902, 907, 909, 910, 911, 913, 916, 917, 962, 963, 964, 966, 993		DA2200*	2000~3300	2000~3300	—
		DA150*	2000~3300	2000~3300	—
		EH510/520	300~600	175~500	150~450
		AC510U	500~850	350~725	325~675
		AC520U	500~850	325~725	325~675
		EH510Z	500~850	350~725	325~675
		EH520Z	500~850	325~725	325~675
		G10E	300~400	175~300	150~250
	Chipbreaker preference		EUP/EEX	EUP/EEX	EMU

* Refer to the PCD section for proper running conditions of PCD grades.



Recommended first choice,

Recommended second choice,

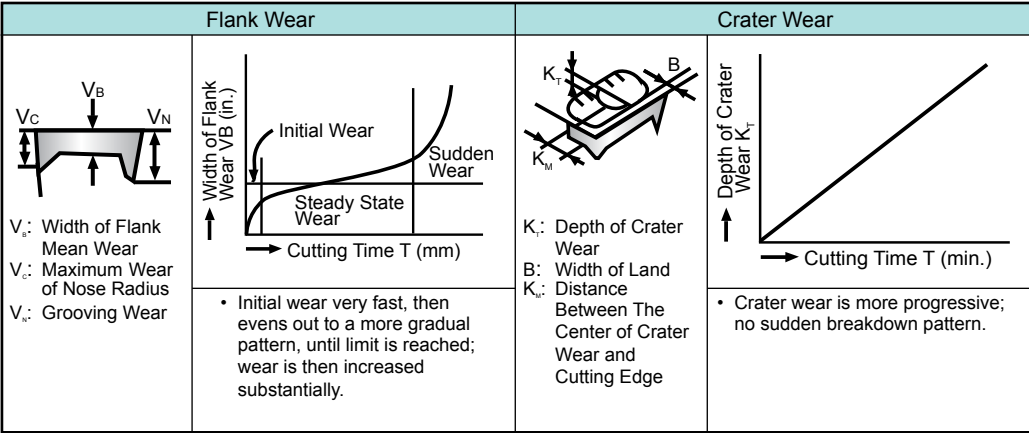
Recommended third choice

WORK MATERIAL	HARD- NESS BHn/Rc	GRADE	MACHINING PARAMETERS		
			Finishing .002~.012 IPR .005"~.060" D.O.C.	Gen. Purpose .010~.020 IPR .060"~.200" D.O.C.	Roughing .015~.030 IPR .200"~ D.O.C.
			CUTTING SPEED (SFM)		
GRAY CAST IRON	<220	BN500*	600~2400	—	—
		BN600*	2000~6000	—	—
		BNS800*	2000~6000	—	—
		NS260/C	—	800~3500	800~2500
		NS30	—	800~3500	800~2500
		T2000Z	600~1400	500~1200	—
		AC300G-S	700~1700	600~1400	500~1100
		AC410K	600~1600	500~1300	400~1000
		YB100	—	400~1300	400~1000
		AC700G	—	400~1200	400~900
		AC2000	—	600~1000	500~900
		AC820P	—	600~1000	500~900
		G10E	200~350	150~300	100~250
	>220	BN500*	600~2000	—	—
		BN600*	1900~3100	—	—
		BNS800*	1900~3100	—	—
		NS260/C	—	800~3500	600~2500
		NS30	—	800~3500	600~2500
		T2000Z	500~1200	400~1000	—
		AC300G-S	650~1700	600~1300	550~1100
		AC410K	550~1600	500~1200	450~1000
		YB100	—	300~1300	400~1100
		AC700G	—	300~1200	400~1000
		AC2000	—	600~1000	500~900
		AC820P	—	600~1000	500~900
		G10E	200~300	150~300	100~250
DUCTILE IRON NODULAR IRON	<220	BN500*	300~1000	—	—
		T2000Z	350~900	400~850	—
		AC300G-S	600~1400	600~1300	500~1100
		AC410K	500~1300	500~1200	400~1000
		YB100	—	500~1200	400~1100
		AC700G	—	500~1100	400~1000
		AC2000	—	600~950	600~900
		AC820P	—	600~950	600~900
		EH20/Z	—	400~750	350~600
	>220	BN500*	300~900	—	—
		T2000Z	330~800	330~750	—
		AC300G-S	500~1100	500~1000	400~900
		AC410K	400~1000	400~900	300~800
		YB100	—	400~1000	300~900
		AC700G	—	400~900	300~800
		AC2000	—	500~900	450~850
		AC820P	—	500~900	450~850
		AC520U	—	330~650	330~600
	Chipbreaker preference			EMU/ENZ	EMU/ENZ

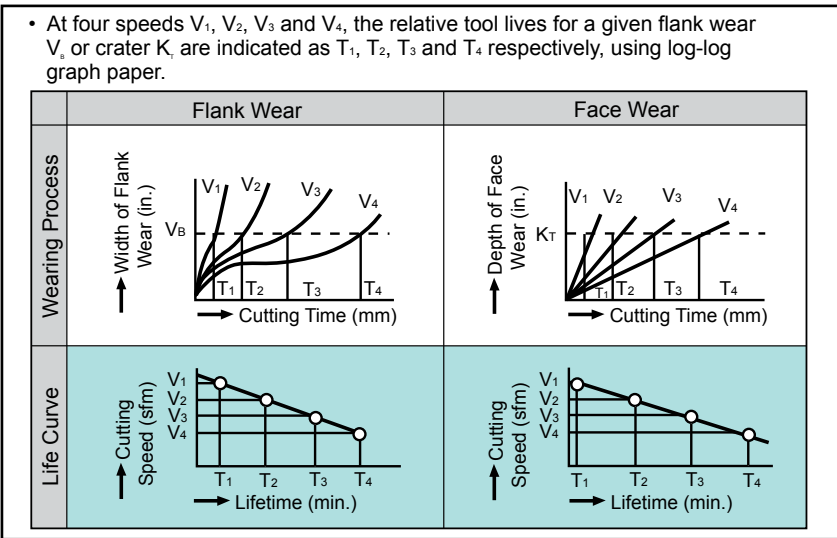
*Refer to the CBN section for proper running conditions of CBN grades.



① Wearing Process Curve



② Life Curve (V-T Lines)



③ Tool Life Equation

• Tool Life Equation (Taylor's Equation)

$$VT^n = C$$

V : Cutting Speed
 T : Tool Life
 n } Constants determined
 C } by work material, tool material, tool design, etc.

④ Alternative Tool Life Criteria

① When surface finish deteriorates unacceptably. ② When a fixed amount of tool wear is reached (see the right-hand table). ③ When work piece dimension is out of tolerance. ④ When power consumption reaches limit. ⑤ Sparking or chip discoloration and disfigurement. ⑥ Cutting time or component quantity.	• Width of Flank Wear for General Life Determination (For Cemented Carbides) <table border="1"> <thead> <tr> <th>Width of Wear (in.)</th><th>Applications</th></tr> </thead> <tbody> <tr> <td>.008</td><td>Finish cutting of non-ferrous alloys, fine & light cut, etc.</td></tr> <tr> <td>.016</td><td>Cutting of special steels</td></tr> <tr> <td>.028</td><td>Normal cutting of cast irons, steels, etc.</td></tr> <tr> <td>.040-.050</td><td>Rough cutting of common cast irons</td></tr> </tbody> </table>	Width of Wear (in.)	Applications	.008	Finish cutting of non-ferrous alloys, fine & light cut, etc.	.016	Cutting of special steels	.028	Normal cutting of cast irons, steels, etc.	.040-.050	Rough cutting of common cast irons
Width of Wear (in.)	Applications										
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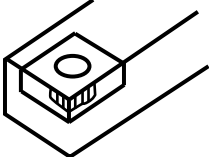
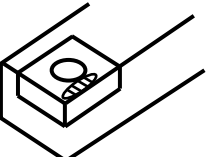
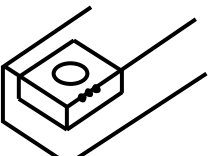
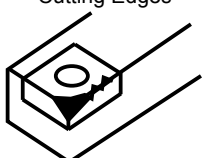
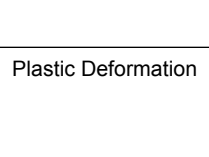


1. Forms of Tool Failure

No.	Failure	Cause	
		Physical	Chemical
1-5	Flank Wear		Due to the abrasive effect of hard grains contained in the work material
6	Chipping		Fine chips caused by high-pressure cutting, chatter, vibration, etc.
7	Partial Fracture		Due to the mechanical impact when an excessive force is applied to the cutting edge
8	Crater Wear		Carbide particles are removed due to degradation of tool performances and chemical reactions at high temperature
9	Deformation		The cutting edge is deformed due to its softening at high temperature
10	Thermal Crack		Thermal fatigue in the heating and cooling cycle with interrupted cutting
11	Build-Up Edge		A portion of the workpiece material adheres to the insert cutting edge

2. Failure Remedies

Edge Failure

Failure	Basic Remedy		Proven Remedies														
Excessive Flank Wear 	Tool Material Cutting Conditions	• Use a more wear-resistant grade Carbide → { Coated Cermet • Decrease speed	• Recommended Insert Grade: <table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Finishing</td><td>T2000Z, AC700G, YB100</td><td>BN700, BN500</td></tr><tr><td>Rough</td><td>AC820P</td><td>AC700G, YB100</td></tr></table>				Steel	Cast Iron	Finishing	T2000Z, AC700G, YB100	BN700, BN500	Rough	AC820P	AC700G, YB100			
	Steel	Cast Iron															
Finishing	T2000Z, AC700G, YB100	BN700, BN500															
Rough	AC820P	AC700G, YB100															
Excessive Crater Wear 	Tool Material Tool Design Cutting Conditions	• Use a crater-resistant grade Carbide → { Coated Cermet • Enlarge the rake angle • Select the correct chip breaker • Decrease speed • Reduce the depth of cut and feed	• Recommended Insert Grade: <table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Finishing</td><td>AC700G, YB100</td><td>BN700, BN500</td></tr><tr><td>Rough</td><td>AC820P</td><td>AC410K</td></tr><tr><td>Machining</td><td>AC830P</td><td>AC700G, YB100</td></tr></table>				Steel	Cast Iron	Finishing	AC700G, YB100	BN700, BN500	Rough	AC820P	AC410K	Machining	AC830P	AC700G, YB100
	Steel	Cast Iron															
Finishing	AC700G, YB100	BN700, BN500															
Rough	AC820P	AC410K															
Machining	AC830P	AC700G, YB100															
Cutting Edge Chipping 	Tool Material Tool Design Cutting Conditions	• Use tougher grades If carbide, (AC2000 → AC3000) • If built-up edge occurs, change to a less susceptible grade (cermet) • Reinforcement of the cutting edge (honing) • Reduce the rake angle • Increase speed (if caused by edge build-up)	• Recommended Insert Grades: <table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Finishing</td><td>T2000Z, T1200A</td><td>BN500, BN700</td></tr><tr><td>Rough</td><td>AC820P</td><td>AC700G</td></tr><tr><td>Machining</td><td>AC830P</td><td></td></tr></table> • All coated inserts are honed				Steel	Cast Iron	Finishing	T2000Z, T1200A	BN500, BN700	Rough	AC820P	AC700G	Machining	AC830P	
	Steel	Cast Iron															
Finishing	T2000Z, T1200A	BN500, BN700															
Rough	AC820P	AC700G															
Machining	AC830P																
Partial Fracture of Cutting Edges 	Tool Material Tool Design Cutting Conditions	• Use tougher grades If carbide, (AC2000 → AC3000) • Use holder with a large approach angle • Use larger shank-size holder • Reduce the depth of cut and feed	• Recommended Insert Grade: <table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Rough</td><td>AC820P</td><td>AC700G</td></tr><tr><td>Machining</td><td>AC830P</td><td></td></tr></table>				Steel	Cast Iron	Rough	AC820P	AC700G	Machining	AC830P				
	Steel	Cast Iron															
Rough	AC820P	AC700G															
Machining	AC830P																
Built-up Edge 	Tool Material Cutting Conditions	• Change to a grade which is adhesion resistant • Increase the cutting speed and feed • Use cutting fluids	• Recommended Insert Grade: <table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Finishing</td><td>T2000Z, T1200A</td><td>BN700, BN500</td></tr><tr><td>Rough</td><td>AC820P</td><td>AC700G, YB100</td></tr></table>				Steel	Cast Iron	Finishing	T2000Z, T1200A	BN700, BN500	Rough	AC820P	AC700G, YB100			
	Steel	Cast Iron															
Finishing	T2000Z, T1200A	BN700, BN500															
Rough	AC820P	AC700G, YB100															
Plastic Deformation 	Tool Material Cutting Conditions	• Change to high thermal resistant grades • Reduce the cutting speed and feed	<table><tr><td></td><th>Steel</th><th>Cast Iron</th></tr><tr><td>Finishing</td><td>T2000Z, AC700G</td><td>AC410K</td></tr><tr><td>Rough</td><td>AC820P</td><td>AC700G, YB100</td></tr></table>				Steel	Cast Iron	Finishing	T2000Z, AC700G	AC410K	Rough	AC820P	AC700G, YB100			
	Steel	Cast Iron															
Finishing	T2000Z, AC700G	AC410K															
Rough	AC820P	AC700G, YB100															



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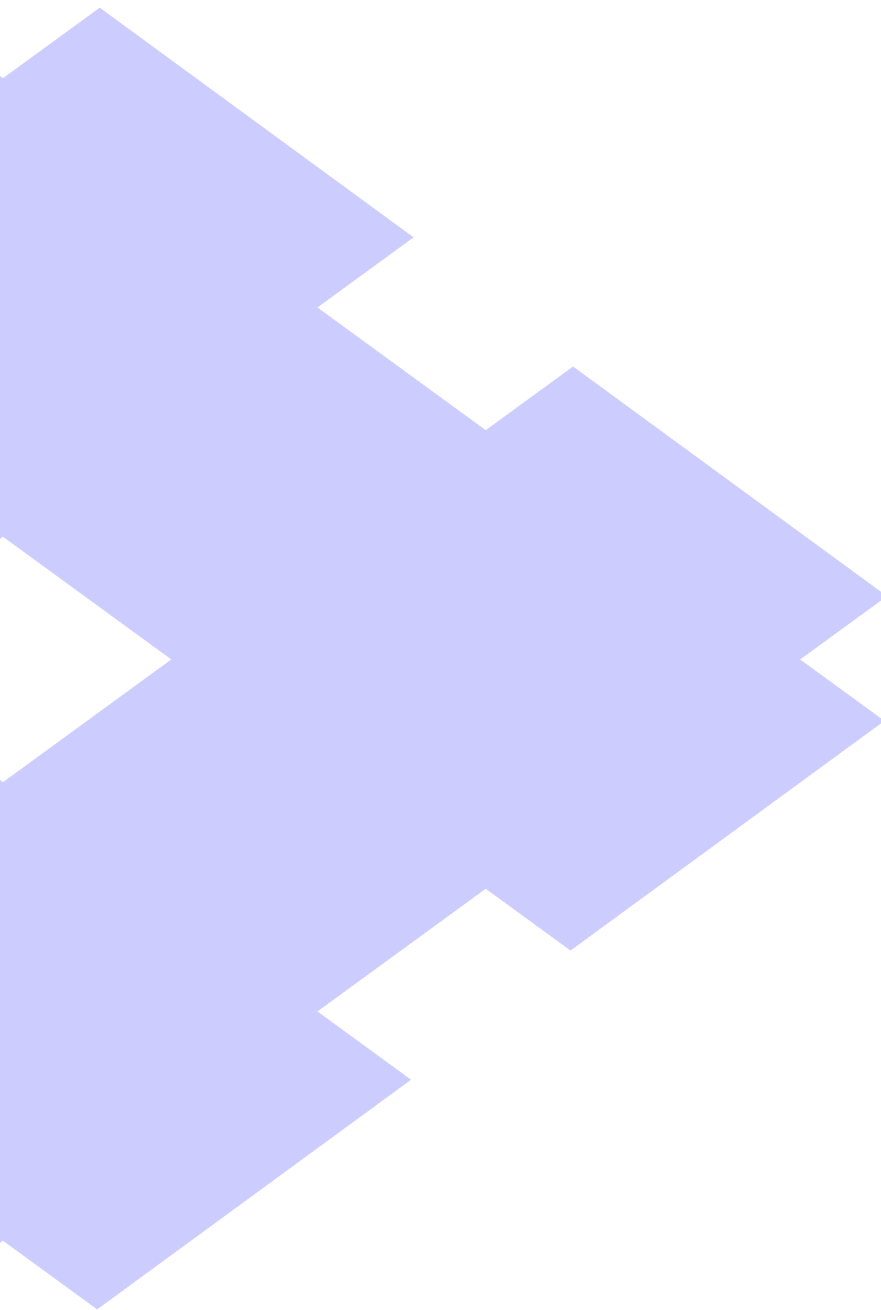


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Ultra Precision Cutting Tools.....	289-292

High-precision cutting of aspheric surfaces, curved and flat surfaces, and V-grooves. Special edge preparations are available



UPC, the series of ultra precision cutting tools developed by A.L.M.T. Corp., features an extremely sharp tool edge with a controlled waviness of 50nm(0.000002) or less in high-precision aspheric and free-curve cutting. The edge preparation of the tool is nanometer-accurate relative to the material characteristics that enable high-precision mirror surface finishing.

Extremely sharp cutting edge with the advanced UPC cutting tools



UPC-R

The UPC-R shows extraordinary success in ultra-precision spherical and aspherical cutting applications

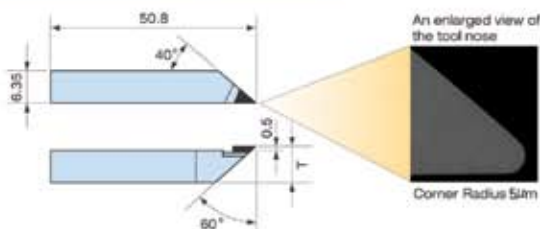


Application

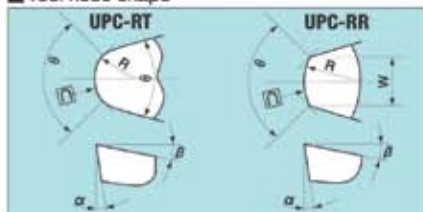
1. CD•DVD pickup lenses molding
2. Molding for optical lenses for cameras
3. Spherical and aspherical reflecting mirrors for laser and X-ray equipment
4. Spherical and aspherical lenses
5. Other precision parts machined with CNC 2-axis lathe

Features

1. A tool edge contour of $0.05\mu\text{m}$ ($50\text{nm} / 0.000002''$) is achieved over a wide working angle of 90° .
2. The cutting edge is precisely finished with minimal waviness. The use of SEM at 2000x magnification for inspection eliminates chipping on the finished tool edge surface.
3. A record of the tool edge contour obtained by our newly developed measuring system (resolution of 5nm) is attached to each tool to guarantee the quality.



Tool nose shape



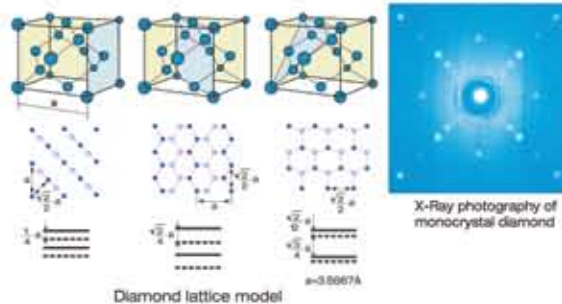
Dimensions & Limit Precision

Type		Contour β			Corner Radius R	Tool Edge Angle θ	Tool Width W	Clearance Angle α	Face Angle β
		$\theta \leq 90^\circ$	$\theta \leq 120^\circ$	$\theta \leq 150^\circ$					
UPC-RT	Ultraprecision	0.05 μm	0.15 μm	0.20 μm	0.01~3 mm	min15°	—	0°~20°	-30°~10°
	Precision	0.5 μm	1.0 μm	2.0 μm					
UPC-RR	Ultraprecision	0.05 μm	0.15 μm	0.20 μm	0.10~200mm	—	0.5~5.0	0°~20°	-30°~10°
	Precision	0.5 μm	1.0 μm	2.0 μm					



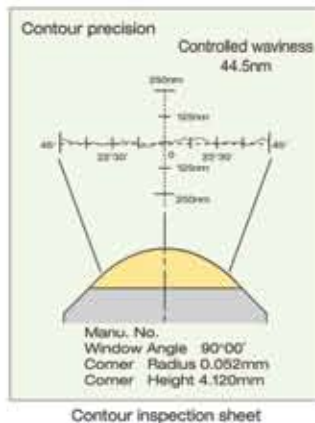
Checking the variation in the distance between carbon atoms in monocrystal diamond assists in determining the optimal crystal orientation

The pursuit of producing nanometer accurate diamond cutting tools begins with the selection of optimal monocrystal diamond. Although it is known that the lattice constant of diamond is 3.5667Å the distance between the crystal planes in monocrystal diamond varies, causing contamination or divisibility. Therefore, it is very important to select the best diamond ore and determine the optimal crystal orientation based on the application.



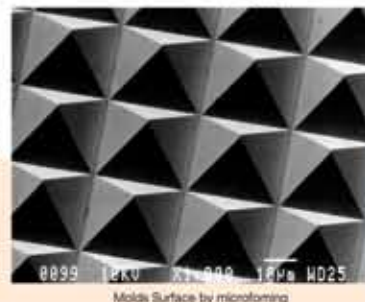
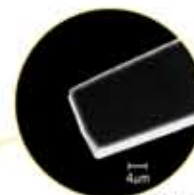
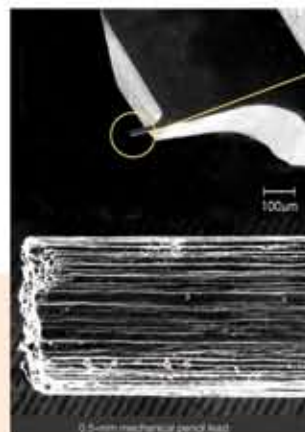
Tool edge polishing technologies used for profiling under nanometer tolerances

In order to accurately produce nanometer-controlled movement on a workpiece, a cutting tool requires a sharp tool edge capable of producing nanometer-size chips, in addition to high contour precision. We have achieved this using our unique polishing and measurement technologies.



Straightness and surface roughness unobtainable with photolithography or ion-beam method

With their extremely sharp cutting edge, the UPC-Nano series developed by A.L.M.T. Corp. achieves excellent surface roughness and straightness, which cannot be obtained using photolithography or ion-beam methods. They are also effective tools in high aspect-ratio applications where micrometer precision is required.



Ultra Precision Cutting Tools *Nano/Microforming Tools* **UPC**



A.L.M.T. Corp., as a leading manufacturer of ultra-precision diamond cutting tools offers a broad range of nano- and micro-forming cutting tools to satisfy market needs.

Our many years of experience and know-how has provided us with a comprehensive understanding of the optimal physical properties of monocrystal diamond. Our state-of-the-art development process yields the highest precision in tool edge measurement. As a result, our diamond cutting tools achieve high-precision microscopic cutting in workpieces with nanometer requirements.



Extremely sharp cutting edge with the advanced UPC


2
 Feature

UPC-F

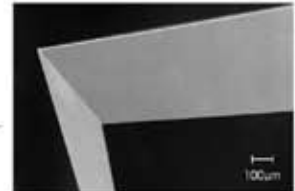
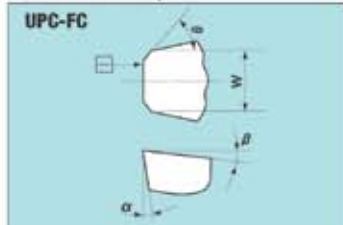
The UPC-F shows its supremacy in high-efficiency and ultra-precision surface and cylindrical cutting applications.


Application

1. laser reflecting mirrors
2. Polygon mirrors
3. Copier sensitive drums
4. Ultra-fine flat or cylindrical surfaces

Features

1. The time required for break-in operation for the initial usage is eliminated or greatly reduced.
2. The edge preparation of the cutting tool is based on the material and the cutting conditions to provide a uniform and high-quality surface finish.


Tool nose shape

Shape Dimensions

Type	Tool Edge Angle β	Tool Width W	Clearance Angle α	Face Angle γ	Horizontal Face Angle γ	Corner Radius R
UPC-FC	45°~80°	1.0~4.0mm	0°~5°	-5°~0°	0°~15°	—

3
 Feature

UPC-T

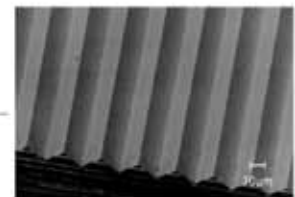
The UPC-T is the optimal tool for fine grooving applications such as Fresnel lens.


Application

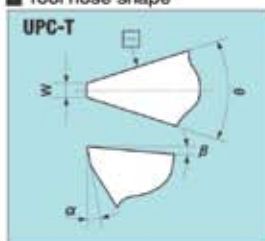
1. Molds of LCD display optical waveguide.
2. Fresnel lens molding.
3. Other fine grooving applications.

Features

1. The cutting edge is uniform and extremely sharp, without chipping or undulation.
2. The shape of the cutting edge is guaranteed to sub micron tolerances.
3. Tool life is long to optimize crystal orientation.



Molds of LCD display optical waveguide

Tool nose shape

Shape Dimensions

Type	Tool Edge Angle β	Leading Edge Width W	Straightness $\square$	Clearance Angle α	Face Angle γ
UPC-T	min20°	min0.2μm	0.05μm	0°~15°	-5°~10°
		min2μm	0.1μm		

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