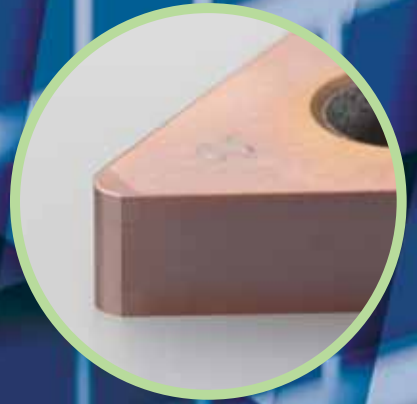




SUMITOMO

CARBIDE - CBN - DIAMOND

Chipbreakers and Wipers



**Excellent
surface finish!
Eliminate
burrs!**

High Performance Turning Systems

**Brochure for Guidelines of Sumitomo
Chipbreakers and Wipers.**



Chipbreaker Guidelines

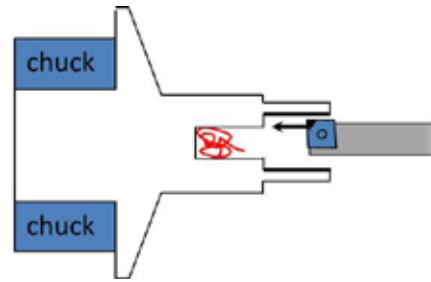
When to use a chipbreaker?

Case 1



Chip jamming during outer machining

Case 2

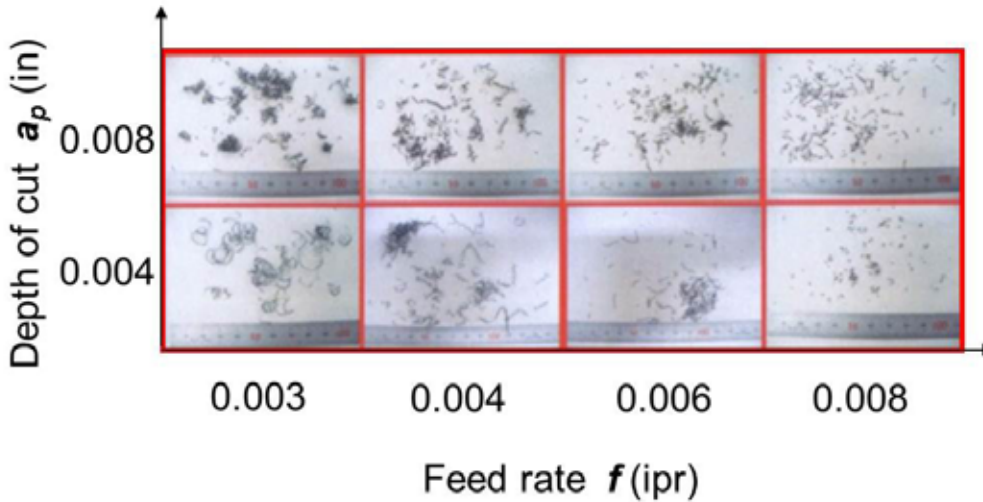


Chip remaining during inner machining

Edge Treatment Chart

Chipbreaker Type	Edge Treatment
SV	NL0.005x-35° +honing0.015
LV	NL0.002x-35° +honing0.015
FV	Honing0.001

Cutting Performance of FV Type



Insert

- 2NC-CCGT32.52FV
- BNC200

Holder

- S16R-SCLCR09

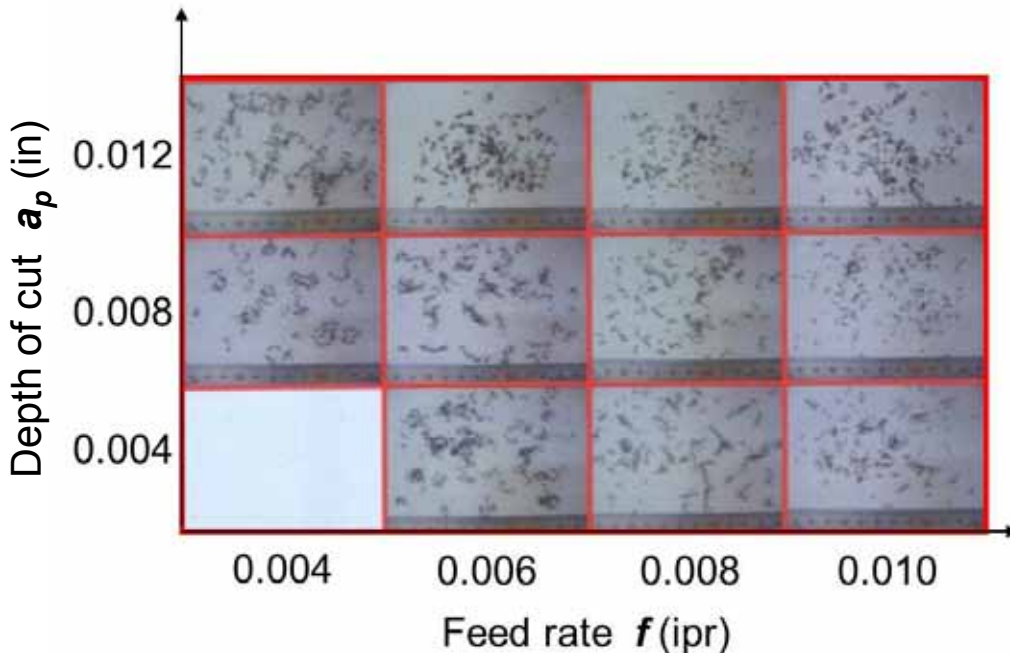
Cutting condition

- $v_c=490$ sfm
- $f=0.003-0.008$ ipr
- $a_p=0.004-0.008$ "
- DRY

Workpiece

- 4115 Steel
- HRc60

Cutting Performance of LV Type



Insert

- 2NC-CCGT32.52LV
- BNC200

Holder

- SCLCR2020-09

Cutting condition

- $v_c=490$ sfm
- $f=0.004-0.010$ ipr
- $a_p=0.004-0.012$ "
- DRY

Workpiece

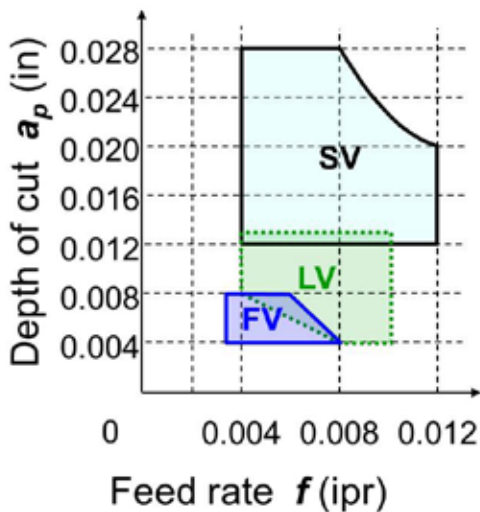
- 4115 Steel
- HRc60

Chipbreaker Inventory



FV Table	Coated				Uncoated				Dimensions			
Product Code	BNC160	BNC200	BN2000	BN7500	Inscribed Circle	Thickness	Nose Radius	Max D.O.C.	Hole Diameter			
2NCCCGT21.50.5FV	●	●			.250	.094	.0078	.008	.134			
2NCCCGT21.51FV	●	●			.250	.094	.0156	.008	.134			
2NCCCGT21.52FV	●	●			.250	.094	.0313	.008	.134			
2NUCCGT21.50.5FV			●		.250	.094	.0078	.008	.134			
2NUCCGT21.51FV			●		.250	.094	.0156	.008	.134			
2NUCCGT21.52FV			●		.250	.094	.0313	.008	.134			
2NCDCGT21.50.5FV	●	●			.250	.094	.0078	.008	.134			
2NCDCGT21.51FV	●	●			.250	.094	.0156	.008	.134			
2NCDCGT21.52FV	●	●			.250	.094	.0313	.008	.134			
2NUDCGT21.50.5FV			●		.250	.094	.0078	.008	.134			
2NUDCGT21.51FV			●		.250	.094	.0156	.008	.134			
2NUDCGT21.52FV			●		.250	.094	.0313	.008	.134			
4NCCNGG431FV	●	●			.500	.1875	.0156	.008	.2031			
4NCCNGG432FV	●	●			.500	.1875	.0313	.008	.2031			
4NCCNGG433FV	●	●			.500	.1875	.0469	.008	.2031			
2NUCNGG431FV			●		.500	.1875	.0156	.008	.2031			
2NUCNGG432FV			●		.500	.1875	.0313	.008	.2031			
2NUCNGG433FV			●		.500	.1875	.0469	.008	.2031			
4NCDNGG431FV	●	●			.500	.1875	.0156	.008	.2031			
4NCDNGG432FV	●	●			.500	.1875	.0313	.008	.2031			
4NCDNGG433FV	●	●			.500	.1875	.0469	.008	.2031			
2NUDNGG431FV			●		.500	.1875	.0156	.008	.2031			
2NUDNGG432FV			●		.500	.1875	.0313	.008	.2031			
2NUDNGG433FV			●		.500	.1875	.0469	.008	.2031			

LV Table	Coated				Uncoated				Dimensions			
Product Code	BNC160	BNC200	BN2000	BN7500	Inscribed Circle	Thickness	Nose Radius	Max D.O.C.	Hole Diameter			
2NCCCGT32.50.5LV	●	●			.375	.156	.0078	.012	.1732			
2NCCCGT32.51LV	●	●			.375	.156	.0156	.012	.1732			
2NCCCGT32.52LV	●	●			.375	.156	.0313	.012	.1732			
2NUCCGT32.50.5LV			●		.375	.156	.0078	.012	.1732			
2NUCCGT32.51LV			●		.375	.156	.0156	.012	.1732			
2NUCCGT32.52LV			●		.375	.156	.0313	.012	.1732			
2NCDCGT32.50.5LV	●	●			.375	.156	.0078	.012	.1732			
2NCDCGT32.51LV	●	●			.375	.156	.0156	.012	.1732			
2NCDCGT32.52LV	●	●			.375	.156	.0313	.012	.1732			
2NUDCGT32.50.5LV			●		.375	.156	.0078	.012	.1732			
2NUDCGT32.51LV			●		.375	.156	.0156	.012	.1732			
2NUDCGT32.52LV			●		.375	.156	.0313	.012	.1732			
4NCCNGG431LV	●	●			.500	.1875	.0156	.012	.2031			
4NCCNGG432LV	●	●			.500	.1875	.0313	.012	.2031			
4NCCNGG433LV	●	●			.500	.1875	.0469	.012	.2031			
2NUCNGG431LV			●		.500	.1875	.0156	.012	.2031			
2NUCNGG432LV			●		.500	.1875	.0313	.012	.2031			
2NUCNGG433LV			●		.500	.1875	.0469	.012	.2031			
4NCDNGG431LV	●	●			.500	.1875	.0156	.012	.2031			
4NCDNGG432LV	●	●			.500	.1875	.0313	.012	.2031			
4NCDNGG433LV	●	●			.500	.1875	.0469	.012	.2031			
2NUDNGG431LV			●		.500	.1875	.0156	.012	.2031			
2NUDNGG432LV			●		.500	.1875	.0313	.012	.2031			
2NUDNGG433LV			●		.500	.1875	.0469	.012	.2031			



SV Table	Coated				Uncoated				Dimensions			
Product Code	BNC160	BNC200	BN2000	BN7500	Inscribed Circle	Thickness	Nose Radius	Max D.O.C.	Hole Diameter			
4NCCNGG432SV		●			.500	.1875	.0469	.028	.2031			
4NCCNGG433SV		●			.500	.1875	.0469	.028	.2031			
4NCDNGG432SV		●			.500	.1875	.0469	.028	.2031			
4NCDNGG433SV		●			.500	.1875	.0469	.028	.2031			
6NCTNGG332SV		●			.375	.1875	.0469	.028	.150			

Wiper Guidelines

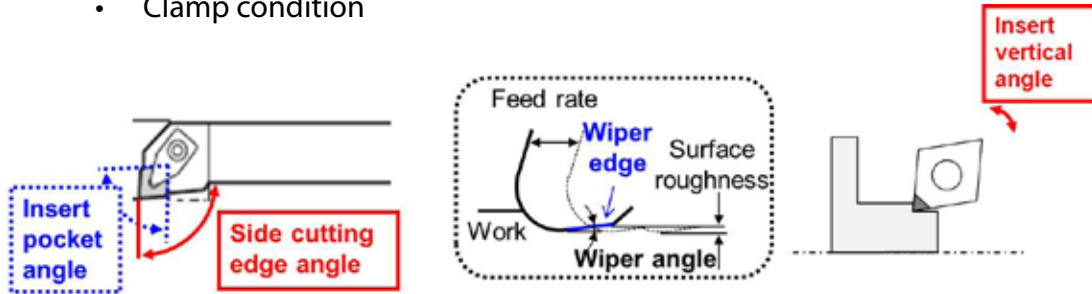
The issue of standard wiper insert
 Tolerance of the side cutting edge angle is ± 1 degree.
 Unstable tool life and surface roughness.

Tolerance variation of holder

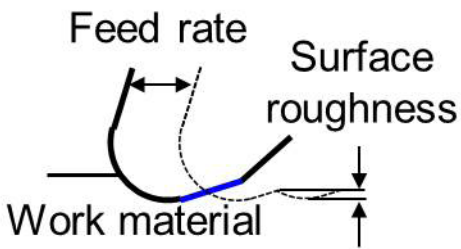
- Side cutting edge angle
- Holder vertical angle
- Clamp condition

Tolerance variation of standard wiper insert

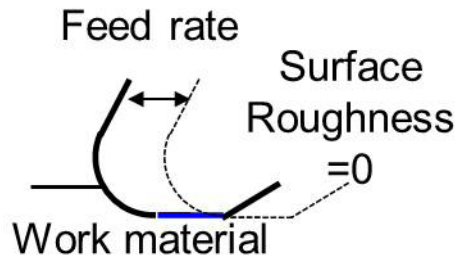
- Wiper angle
- Insert vertical angle



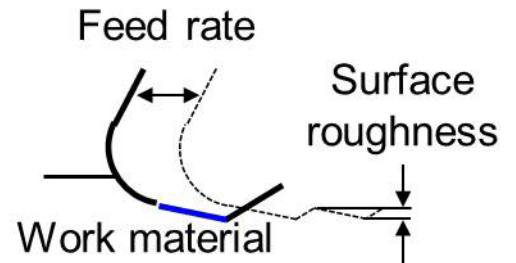
Type1



Type2



Type3



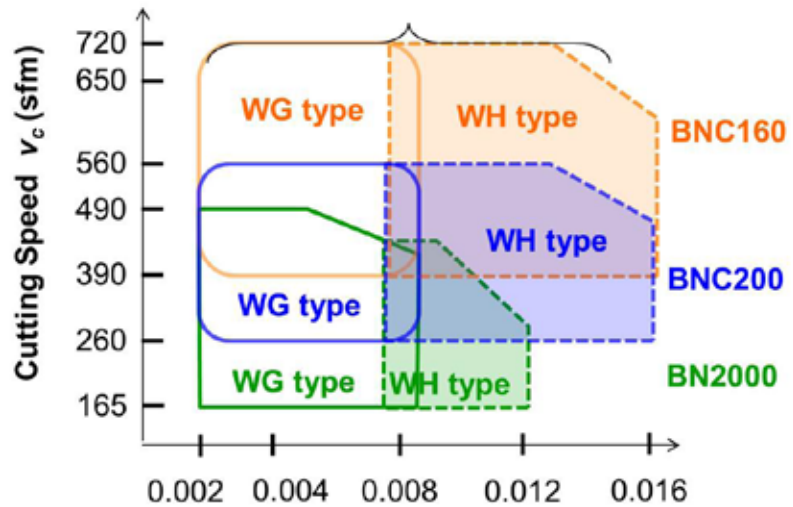
BN7500 Cutting Conditions

Material Name	V _c (sfm)	f (ipr)		a _p (inch)
		WG	WH	
Grey Cast Iron	1640 - 6560	0.004 - 0.008	0.008 - 0.020	≤ 0.039
Alloy Cast Iron	660 - 2620	0.004 - 0.016	0.008 - 0.016	≤ 0.019
Ductile Cast Iron	260 - 660	0.004 - 0.016	0.008 - 0.016	≤ 0.024
Powdered Metal	400 - 800	0.002 - 0.008	0.008 - 0.012	≤ 0.020

Wiper Inventory

WG Table	Coated		Uncoated		Inscribed Circle	Thickness	Nose Radius	Max D.O.C.	Hole Diameter
	BNC160	BNC200	BN2000	BN7500					
2NCCCGA21.50.5WG	●	●			.250	.094	.0078	.015	.134
2NCCCGA21.51WG	●	●			.250	.094	.0156	.015	.134
2NCCCGA21.52WG	●	●			.250	.094	.0313	.015	.134
2NCCCGA32.50.5WG	●	●			.375	.156	.0078	.015	.1732
2NCCCGA32.51WG	●	●			.375	.156	.0156	.015	.1732
2NCCCGA32.52WG	●	●			.375	.156	.0313	.015	.1732
2NUCCGA21.50.5WG			●	●	.250	.094	.0078	.015	.134
2NUCCGA21.51WG			●	●	.250	.094	.0156	.015	.134
2NUCCGA21.52WG			●	●	.250	.094	.0313	.015	.134
2NUCCGA32.50.5WG			●	●	.375	.156	.0078	.015	.1732
2NUCCGA32.51WG			●	●	.375	.156	.0156	.015	.1732
2NUCCGA32.52WG			●	●	.375	.156	.0313	.015	.1732
2NCDCGA21.50.5WG	●	●			.250	.094	.0078	.015	.134
2NCDCGA21.51WG	●	●			.250	.094	.0156	.015	.134
2NCDCGA21.52WG	●	●			.250	.094	.0313	.015	.134
2NCDCGA32.50.5WG	●	●			.375	.156	.0078	.015	.1732
2NCDCGA32.51WG	●	●			.375	.156	.0156	.015	.1732
2NCDCGA32.52WG	●	●			.375	.156	.0313	.015	.1732
2NUDCGA21.50.5WG			●	●	.250	.094	.0078	.015	.134
2NUDCGA21.51WG			●	●	.250	.094	.0156	.015	.134
2NUDCGA21.52WG			●	●	.250	.094	.0313	.015	.134
2NUDCGA32.50.5WG			●	●	.375	.156	.0078	.015	.1732
2NUDCGA32.51WG			●	●	.375	.156	.0156	.015	.1732
2NUDCGA32.52WG			●	●	.375	.156	.0313	.015	.1732
4NCCNGA431WG	●	●			.500	.1875	.0156	.015	.2031
4NCCNGA432WG	●	●			.500	.1875	.0313	.015	.2031
4NCCNGA433WG	●	●			.500	.1875	.0469	.015	.2031
2NUCNGA431WG			●	●	.500	.1875	.0156	.015	.2031
2NUCNGA432WG			●	●	.500	.1875	.0313	.015	.2031
4NCDNGA431WG	●	●			.500	.1875	.0156	.015	.2031
4NCDNGA432WG	●	●			.500	.1875	.0313	.015	.2031
2NUDNGA431WG			●	●	.500	.1875	.0156	.015	.2031
2NUDNGA432WG			●	●	.500	.1875	.0313	.015	.2031
6NCWNGA432WG	●	●			.500	.1875	.0313	.015	.2031
6NCWNGA433WG	●	●							

WH Table	Coated		Uncoated		Inscribed Circle	Thickness	Nose Radius	Max D.O.C.	Hole Diameter
	BNC160	BNC200	BN2000	BN7500					
4NCCNGA431WH	●	●			.500	.1875	.0156	.015	.2031
4NCCNGA432WH	●	●			.500	.1875	.0313	.015	.2031
2NUCNGA431WH			●	●	.500	.1875	.0156	.015	.2031
2NUCNGA432WH			●	●	.500	.1875	.0313	.015	.2031
4NCDNGA431WH	●	●			.500	.1875	.0156	.015	.2031
4NCDNGA432WH	●	●			.500	.1875	.0313	.015	.2031
2NUDNGA431WH			●	●	.500	.1875	.0156	.015	.2031
2NUDNGA432WH			●	●	.500	.1875	.0313	.015	.2031
6NCWNGA432WH	●	●			.500	.1875	.0313	.015	.2031
6NCWNGA433WH	●	●			.500	.1875	.0469	.015	.2031





SUMITOMO

CARBIDE - CBN - DIAMOND

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