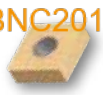
BNC2105/BNC2115/BNC2125/BNC2010/BNC2020/BNC300

Features

BNC2105 **Highly wear-resistant grade for high-speed machining**
for a stable and long tool life under highspeed machining conditions due to new coating technologies and modified CBN substrate.

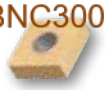
BNC2115 **The definitive grade in high-accurancy machining**
Realises long tool life with excellent surface roughness and stable machining.
Further maintains excellent surface roughness
Maintains excellent surface roughness thanks to a coating with high notch wear resistance and tough CBN substrate.

BNC2125 **First recommendation for hardened steel machining**
Superb wear and fracture resistance.
Achieves long, stable tool life even in high-efficiency and interrupted machining
Along with a tough CBN substrate, the coating combines wear resistance and toughness to realise stable machining.



BNC2010 **Grade for high-precision machining with excellent surface roughness and finished surface accuracy**
Grade ideal for high-precision machining, with highly wear-resistant CBN substrate and coating.

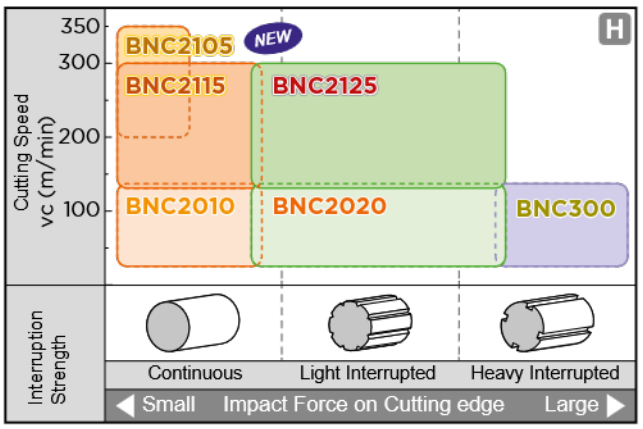
BNC2020 **General-purpose grade suitable for typical hardened steel machining applications**
Achieves further stability in machining of a wide range of hardened steel components.



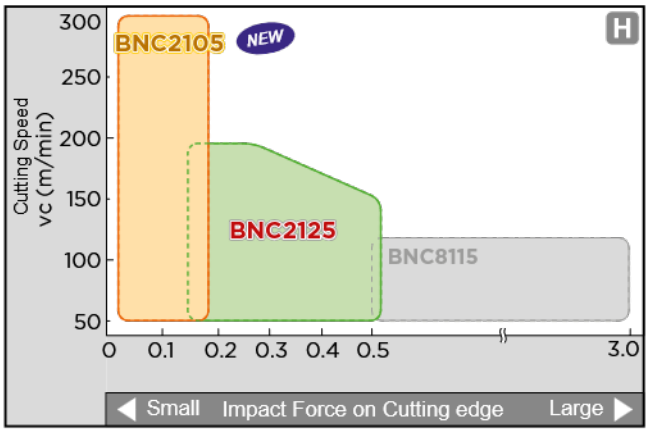
BNC300 **Achieves long, stable tool life even in machining including heavy interrupted cutting**
Achieves long, stable tool life even on work material requiring both continuous and interrupted cutting.

Application Range

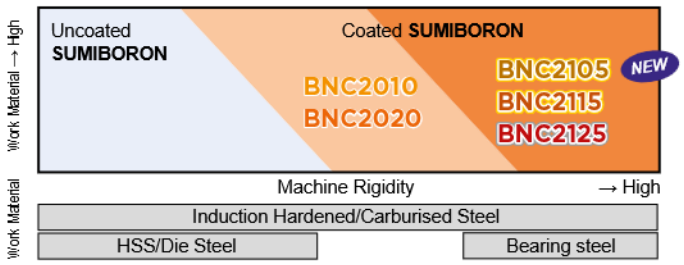
Induction Hardened Steel (C45/C55), Carburised Steel



Bearing Steel (100Cr6, etc)



Differentiation



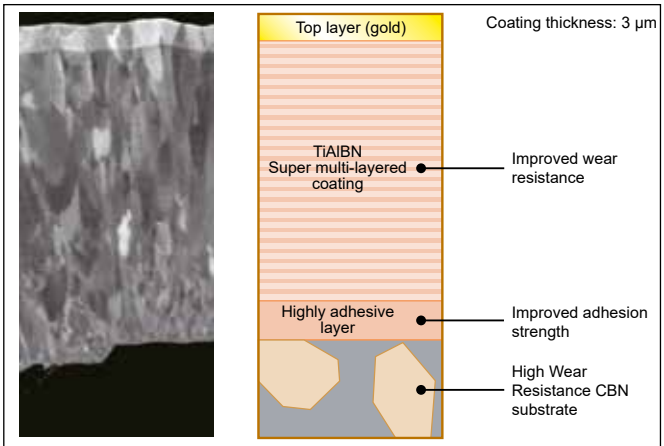
Recommended Cutting Conditions

Grade	Cutting Speed (vc) (m/min) Min. - **Optimum** -Max.	Feed Rate f (mm/rev) Min. - **Optimum** -Max.	Depth of Cut ap (mm) Min. - **Optimum** -Max.
BNC2105	150 - **200** - 350	0.03 - **0.10** - 0.15	0.03 - **0.15** - 0.20
BNC2115	110 - **180** - 300	0.03 - **0.10** - 0.20	0.03 - **0.20** - 0.35
BNC2125	110 - **160** - 300	0.05 - **0.20** - 0.40	0.05 - **0.30** - 0.50
BNC2010	50 - **140** - 180	0.03 - **0.10** - 0.20	0.03 - **0.20** - 0.35
BNC2020	50 - **120** - 180	0.03 - **0.20** - 0.40	0.05 - **0.30** - 0.50
BNC300	50 - **100** - 150	0.03 - **0.10** - 0.20	0.03 - **0.20** - 0.30

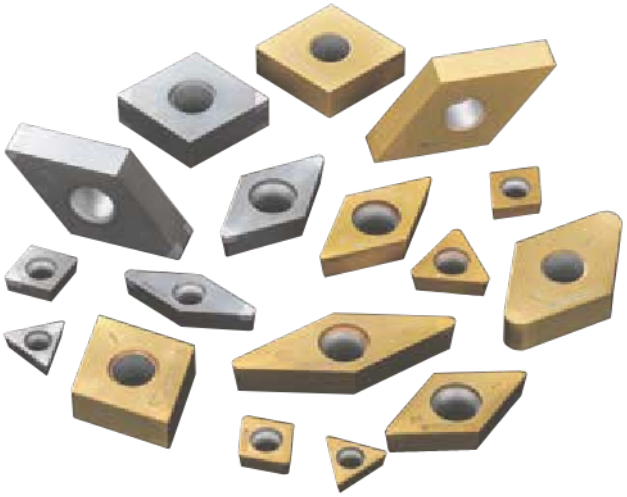
CBN Substrate und Coating Structure

BNC2105 NEW

High-precision Machining
(High-speed)

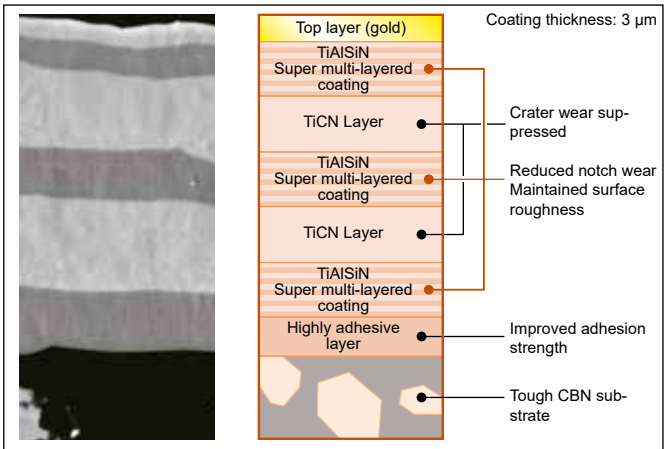


Highly wear-resistant TiAlN super multi-layered coating is made thicker. Realises long tool life in high-speed cutting in combination with a substrate using a newly developed TiCN binder with excellent thermal resistance



BNC2115

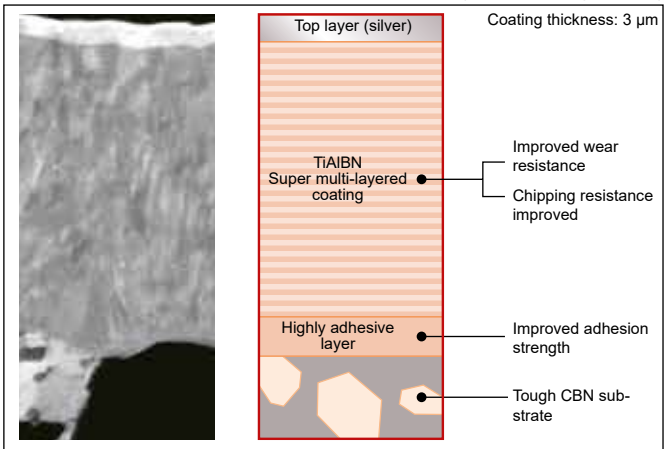
High-Precision Machining
(Medium- to high-speed)



Thick layer of laminated high-strength TiAlSiN super multi-layered coating and highly heat-resistant TiCN coating. Achieves excellent surface fnish quality with application to a tough substrate.

BNC2125

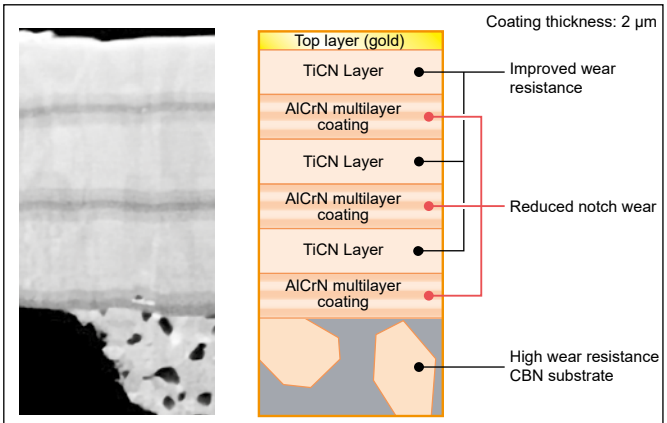
General Machining
(Medium- to high-speed)



Thick layer of super-multilayered ultra-fine TiAlBN coating with high strength and high hardness. High performance in a wide range of cutting through application to a tough substrate.

BNC2010

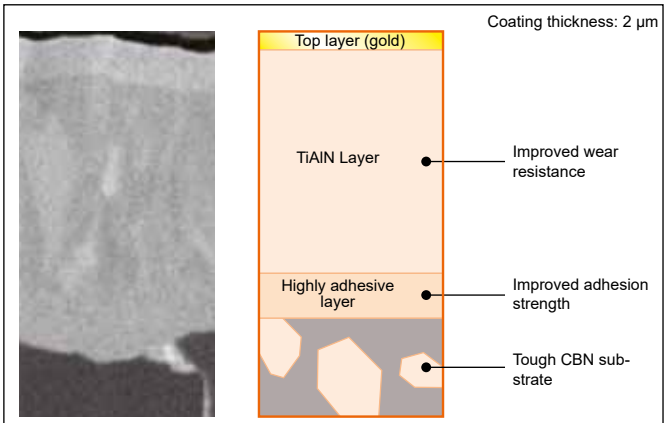
High-Precision Machining
(Low- to medium-speed)



Laminated high-strength AlCrN multi-layered coating and highly heat-resistant TiCN coating is applied to a highly wear-resistant substrate to maintain excellent surface finish quality.

BNC2020

General Purpose Machining
(Low to medium speed, unstable cutting)

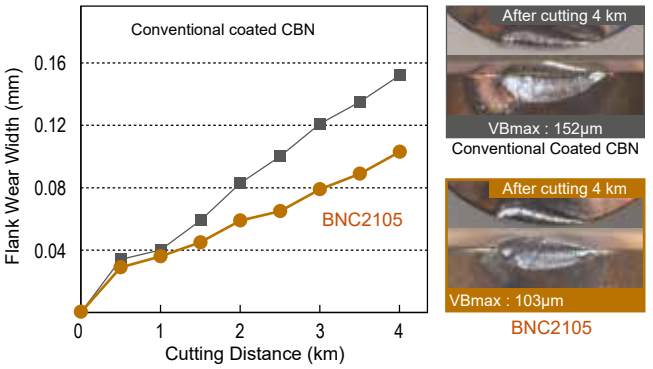


Application of highly wear-resistant TiAlN coating to a tough substrate. Machining stability in low-rigidity environments and high-load cutting is dramatically improved.

Cutting Performance

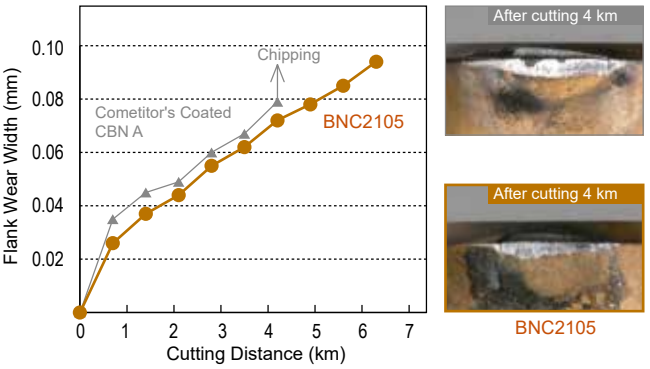
BNC2105 NEW

Continuous Cutting, Wear Resistance



Work Material:	100Cr6 (58-62HRC)
Insert:	DNGA1504084NC
Cutting Data:	v_c = 200m/min, f = 0.1mm/rev, ap = 0.1mm Wet

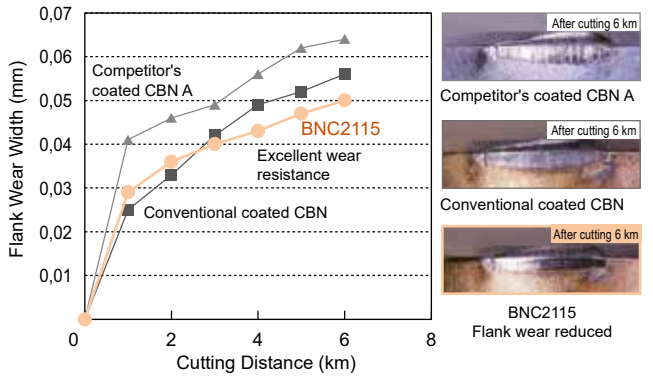
Continuous Cutting, Wear Resistance



Work Material:	15CrMo5 (58-62HRC)
Insert:	DNGA1504084NC-
Cutting Data:	v_c = 250m/min, f = 0.06mm/rev, ap = 0.1mm Wet

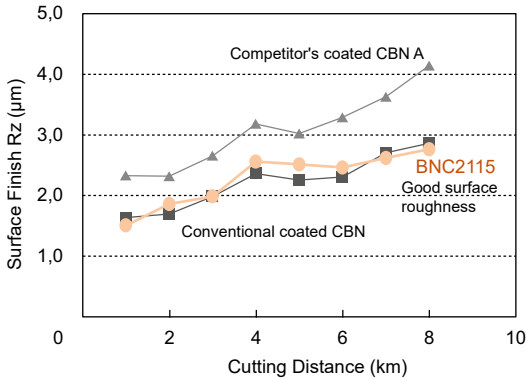
BNC2115

Continuous Cutting, Wear Resistance



Work Material:	16CrMo4 (58–62 HRC)
Insert:	DNGA150408NC4
Cutting Data:	v_c = 200 m/min, f = 0,1 mm/rev, a_p = 0,15 mm, wet

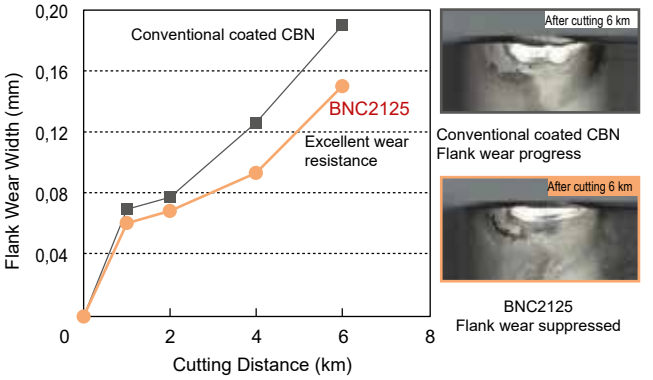
Continuous Cutting, Machined Surface Roughness



Work Material:	16CrMo4 (58–62 HRC)
Insert:	DNGA150408NC4
Cutting Data:	v_c = 200 m/min, f = 0,1 mm/rev, a_p = 0,15 mm, wet

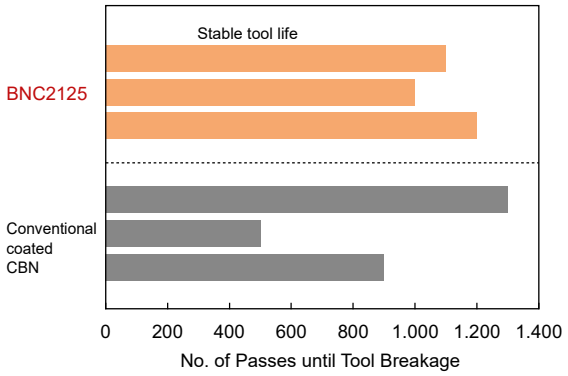
BNC2125

Continuous Cutting, Wear Resistance



Work Material:	100Cr6 (58–62 HRC)
Insert:	DNGA150408NC4
Cutting Data:	v_c = 150 m/min, f = 0,1 mm/rev, a_p = 0,2 mm, wet

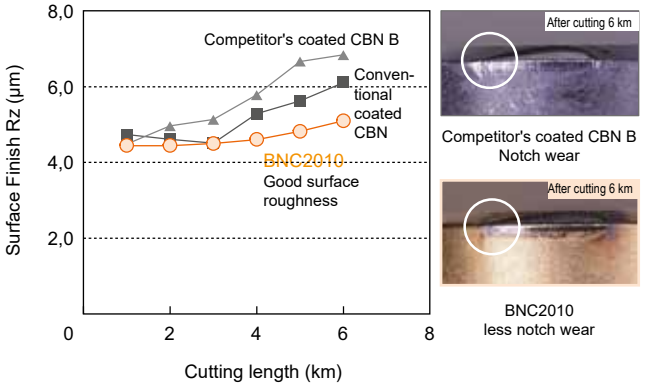
High-Load Cutting, Fracture Resistance



Work Material:	100Cr6 (58–62 HRC)
Insert:	DNGA150408NC4
Cutting Data:	v_c = 150 m/min, f = 0,15 mm/rev, a_p = 0,5 mm, 63 m/times, wet

BNC2010

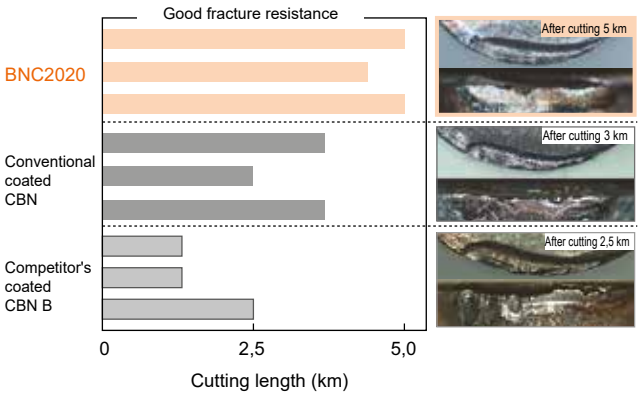
Continuous Cutting, Machined Surface Roughness



Work Material:	16CrMo4 (58–62 HRC)
Insert:	DNGA150408NC4
Cutting Data:	v_c = 120 m/min, f = 0,14 mm/rev, a_p = 0,15mm, wet

BNC2020

Interrupted Cutting, Fracture Resistance

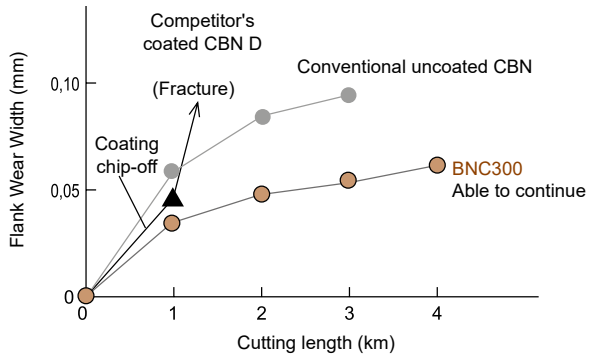


Work Material:	16CrMo4 with 5 grooves (58–62 HRC)
Insert:	DNGA1204012NC4
Cutting Data:	v_c = 130 m/min, f = 0,1 mm/rev, a_p = 0,6 mm, dry

Cutting Performance

BNC300

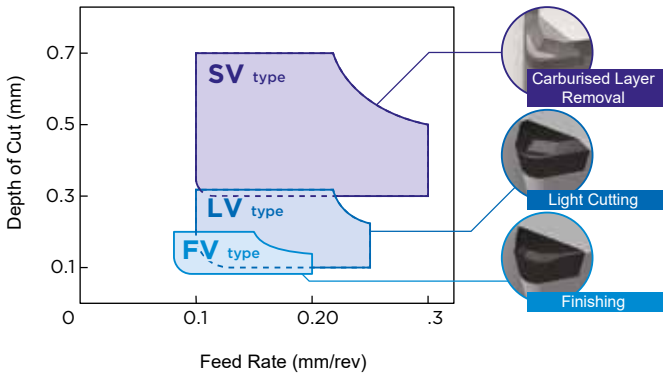
Interrupted Cutting, Fracture Resistance



Work Material:	Grooved 15CrMo5 (58–62 HRC)
Insert:	CNGA120408NC4
Cutting Data:	v_c = 120 m/min, f = 0,1 mm/rev, a_p = 0,2 mm, dry

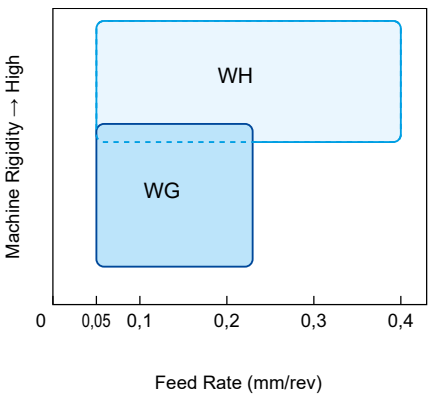
One-use Inserts with Chipbreaker Breakmaster

Application Range



One-use Wiper Inserts

Application Range



WH type:
for high-rigidity workpieces and equipment

WG type:
for issues of undulation or chatter