



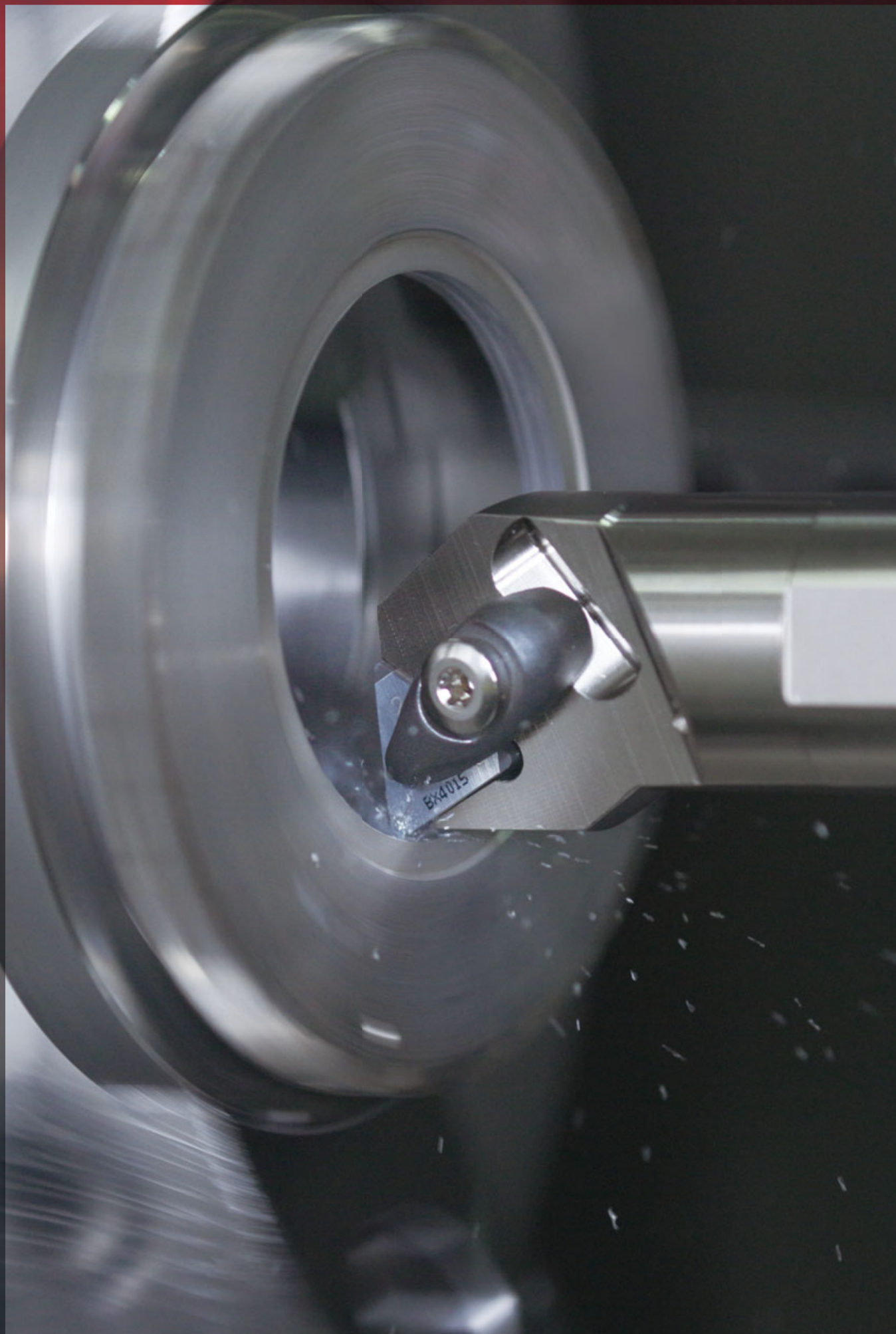
CBN insert

BX4015

Tungaloy Report No. 571-G

New CBN grade for sintered alloys







BX4015

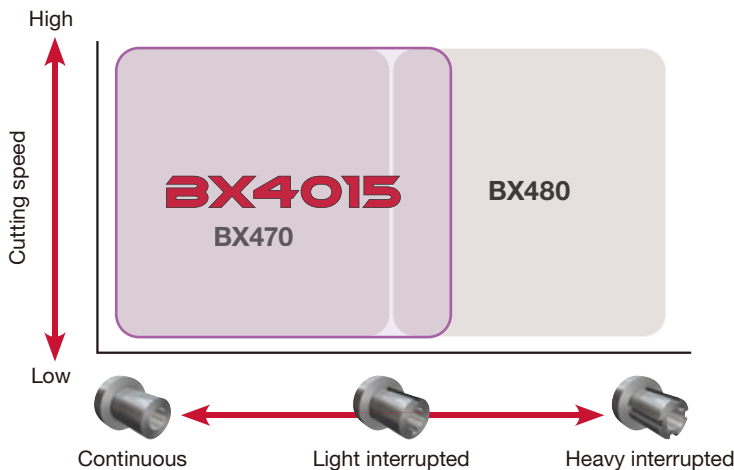


Provides superior process security
during finish machining of sintered alloys

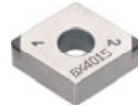
BX4015

CBN grade for sintered alloys

■ Application areas

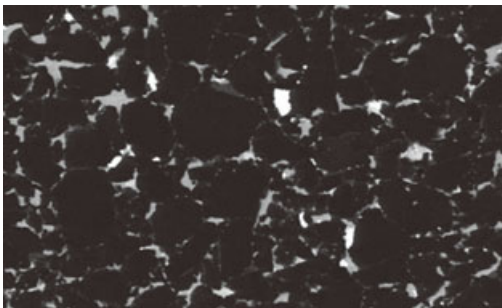


BX4015



Provides excellent performance in continuous to light-interrupted cuts of sintered alloy parts

■ Grade properties

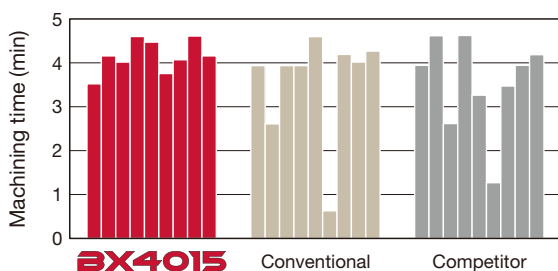


- High cBN-content grade for superior wear resistance
- Composed of sub-micron sized fine cBN grains, the grade allows for excellent edge line security, which eliminates burr formation and surface plucking during machining
- Incorporating unique binder material, the grade provides increased interfacial bonding between the cBN grains and binder, allowing superior fracture resistance

■ Cutting performance

Sintered alloy

SMF4040 (58 - 68HRA)

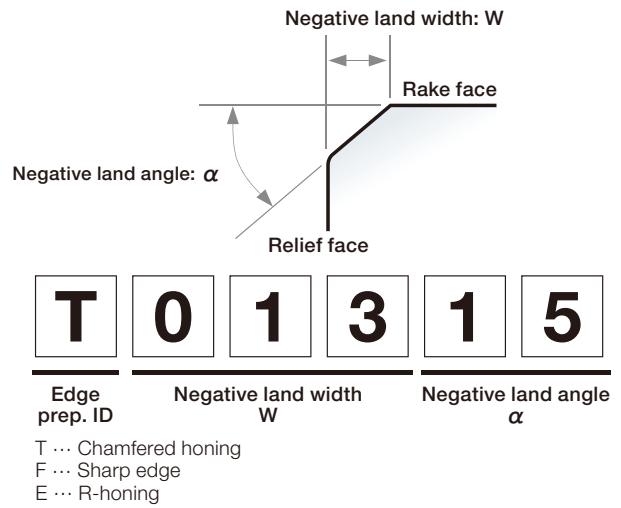
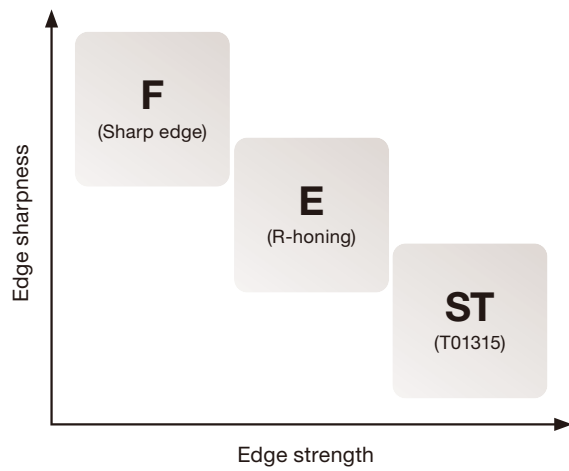


Insert : CNGA120408F
Cutting speed : $V_c = 300$ m/min
Feed : $f = 0.1$ mm/rev
Depth of cut : $a_p = 0.2$ mm
Machining : Interrupted face turning
Coolant : Wet



BX4015 has demonstrated consistent fracture resistance.

■ Edge preparations



■ STANDARD CUTTING CONDITIONS

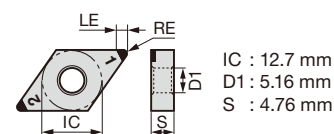
Application	Workpiece materials	Cutting speed V_c (m/min)	Depth of cut a_p (mm)	Feed f (mm/rev)
Sintered alloy	General sintered alloy	10 - 300	0.05 - 0.5	0.01 - 0.3
	High density sintered alloy	10 - 300	0.05 - 0.5	0.01 - 0.3
	Sintered-hardened alloy	10 - 180	0.05 - 0.3	0.01 - 0.2

Technical drawing showing the IC (Integrated Circuit) and S (Solder) components. The IC is a square component with a central circular feature. The S component is a rectangular component. Dimensions are provided for the IC and S components.

IC : 12.7 mm
 D1 : 5.16 mm
 S : 4.76 mm



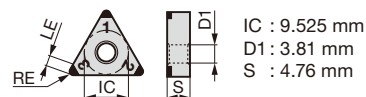
● : Line up



55° Rhombic with hole

● : Line up

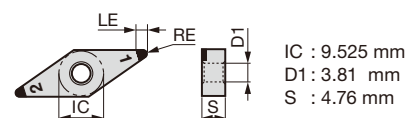
 Triangular with hole

[illegible]

VN



35° Rhombic with hole

[illegible]

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IC : 6.35 mm
D1 : 2.8 mm
S : 2.38 mm

[illegible]

IC : 9.525 mm
D1 : 4.4 mm
S : 3.97 mm

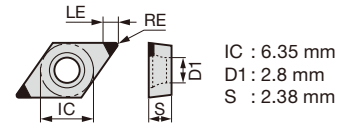
[illegible]

● : Line up

DC



**55° Rhombic
with hole, Positive 7°**





55° Rhombic

with hole, Positive 7°

K

Cast iron

S

Superalloy

H

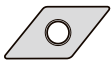
Hard material

Sintered alloy

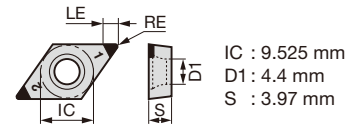
Application	Designation	Dimension (mm)		No. of corners	Wiper	Standard	Problem				BX4015																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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● : Line up

DC



**55° Rhombic
with hole, Positive 7°**





55° Rhombic

with hole, Positive 7°

K

Cast iron

S

Superalloy

H

Hard material

Sintered alloy

●

c

</

● : Line up

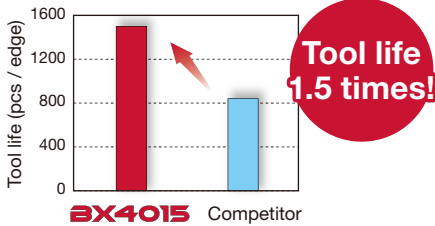
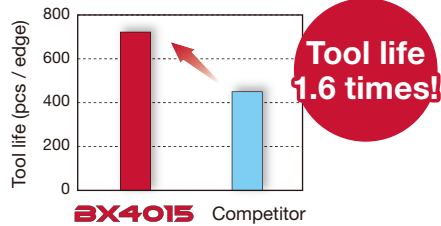
IC : 6.35 mm
D1 : 3.4 mm
S : 3.18 mm

● : Line up

IC : 9.525 mm
D1 : 4.4 mm
S : 4.76 mm

● : Line up

PRACTICAL EXAMPLES

Workpiece type		Sprocket	Sprocket
Insert		3QP-TNGA160408F	3QP-TNGA160408E
Grade		BX4015	BX4015
Workpiece material		Iron-based sintered alloy	Iron-based sintered alloy (partly hardened)
		 Sintered alloy	 Sintered alloy
Cutting conditions	Cutting speed: V_c (m/min)	55	218
	Feed : f (mm/rev)	0.08	0.16
	Depth of cut : a_p (mm)	0.3	0.13
	Coolant	Wet	Wet
Results		 BX4015 demonstrated excellent chipping resistance, provided good surface quality, and achieved 1.5 times tool life increase.	 Boasting excellent edge-line security, BX4015 successfully eliminated burr formation on interrupted parts, while extending tool life by 1.6 times.

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