

Tungaloy

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Tungaloy Report No. 398-US

T-CBN

CBN grade for centrifugally casted iron machining

BX910

NEW

Innovative grade for the machining of centrifugally casted iron

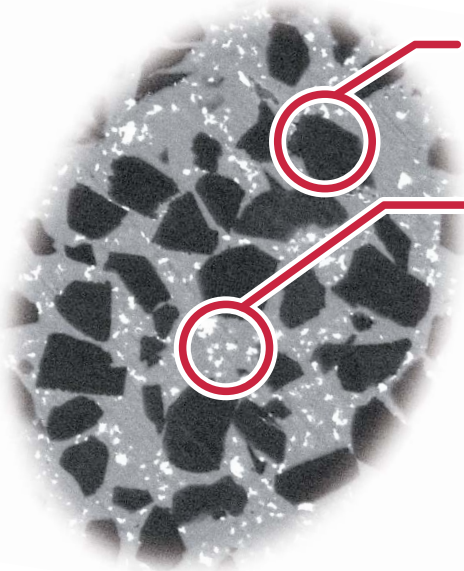


Optimum solution for high speed machining of centrifugally casted iron !



Features

● Stable and long tool life with high cutting speed



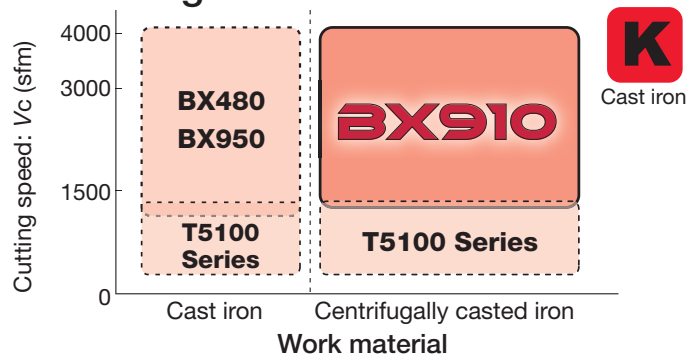
Improved wear and chipping resistance

- Optimized dispersion and content of cBN particles

Improved wear resistance when high speed machining

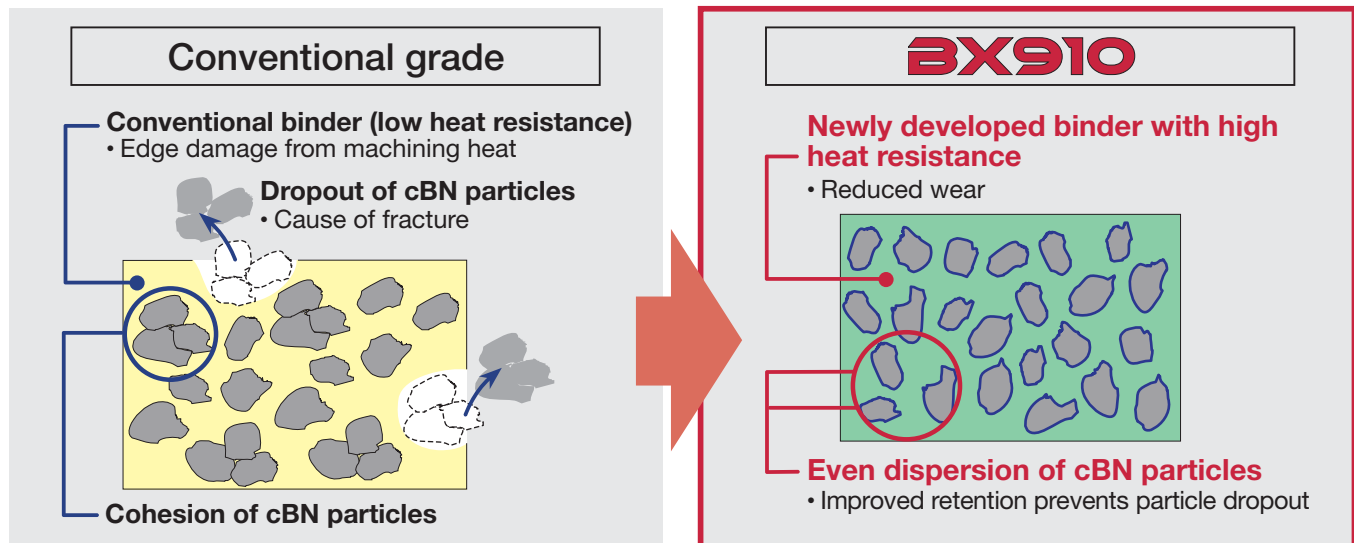
- Newly developed binder with high heat resistance

● Application range



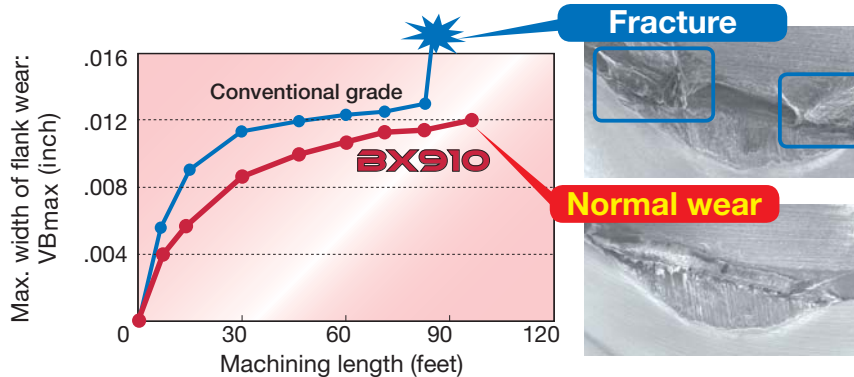
■ Microstructure of BX910

● Comparison with conventional grade



Cutting performance

BX910 remains stable without sudden fracture.



Insert : 2QP-SPGW434
 Work material : Centrifugally casted iron
 Cutting speed : $V_c = 3300$ sfm
 Feed : $f = .016$ ipr
 Depth of cut : $a_p = .003$ inch
 Machining method: Internal machining
 Coolant : Wet

Grade properties

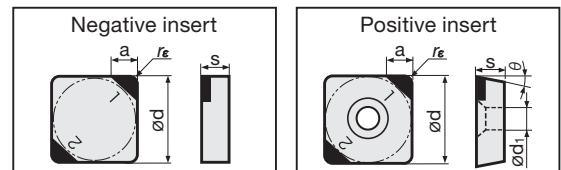
Application	Grade	Hardness (HV)	T. R. S. (GPa)	Features
Cast iron	BX910	2600 ~ 2800	0.8 ~ 0.9	CBN grade for centrifugally casted iron machining cBN grade with high wear resistance in high cutting speed, provides long and stable tool life in the machining of centrifugally casted iron, such as cylinder liners.

Standard cutting conditions

Application	Grade	Cutting speed V_c (sfm)	Depth of cut a_p (inch)	Feed f (ipr)
Cast iron	BX910	3300 (1600 - 4000)	.004 (.001 - .020)	.012 (.008 - .020)

Inserts

Negative type



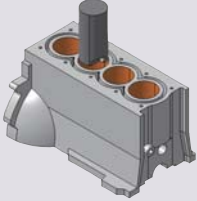
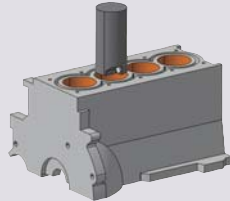
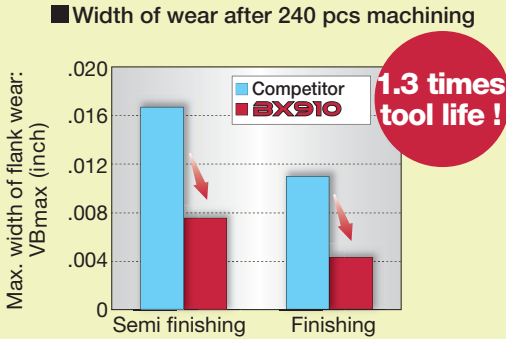












Features	Cat. No.	Grade BX910	No. of corners	Dimensions (inch)				
				I.C.dia ϕd	Thickness s	Hole dia ϕd_1	Corner R r_ϵ	CBN length a
Standard	2QP-SNGN322	●	2	.375	.125	-	.031	.094
	2QP-SNGN323	●	2	.375	.125	-	.047	.094

Positive type

Features	Cat. No.	Grade BX910	No. of corners	Dimensions (inch)					
				Relief angle θ	I.C.dia ϕd	Thickness s	Hole dia ϕd_1	Corner R r_ϵ	CBN length a
Standard	2QP-SPGW32.52	●	2	11°	.375	.156	.173	.031	.094
	2QP-SPGW32.53	●	2	11°	.375	.156	.173	.047	.094
	2QP-SPGW432	●	2	11°	.500	.187	.217	.031	.094
	2QP-SPGW433	●	2	11°	.500	.187	.217	.047	.094
	2QP-SPGW434	●	2	11°	.500	.187	.217	.062	.094
	2QP-SPGN322	●	2	11°	.375	.125	-	.031	.094
	2QP-SPGN323	●	2	11°	.375	.125	-	.047	.094
	3QP-TPGW222	●	3	11°	.250	.125	.134	.031	.074
	3QP-TPGN222	●	3	11°	.250	.125	-	.031	.074
	3QP-TPGN223	●	3	11°	.250	.125	-	.047	.094

● : Stocked items

Practical examples

Workpiece type		Cylinder liner	Cylinder liner									
Insert		2QP-SPGW434	2QP-SPGW434									
Grade		BX910	BX910									
Work material		Centrifugally casted iron	Centrifugally casted iron									
												
Cutting conditions	Cutting speed: V_c (sfm)	3300	3300									
	Feed : f (ipr)	.012	.016									
	Depth of cut: a_p (inch)	Semi finishing: .012 Finishing: .001	Roughing: .016 Finishing: .002									
	Machining	Boring	Boring									
	Coolant	Wet	Wet									
Results		<p>■ Width of wear after 240 pcs machining</p>  <p>Max. width of flank wear: VBmax (inch)</p> <p>Semi finishing Finishing</p> <p>The tool life of the BX910 reaches beyond 300pcs.</p>	<table border="1"> <thead> <tr> <th></th> <th>Roughing</th> <th>Finishing</th> </tr> </thead> <tbody> <tr> <td>BX910 Number of work bore: 700</td> <td></td> <td></td> </tr> <tr> <td>Competitor Number of work bore: 660</td> <td></td> <td></td> </tr> </tbody> </table> <p>Sudden fracture and wear on the edge are reduced, providing highly stable machining and tool life.</p>		Roughing	Finishing	BX910 Number of work bore: 700			Competitor Number of work bore: 660		
			Roughing	Finishing								
BX910 Number of work bore: 700												
Competitor Number of work bore: 660												



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