ZCC-CT

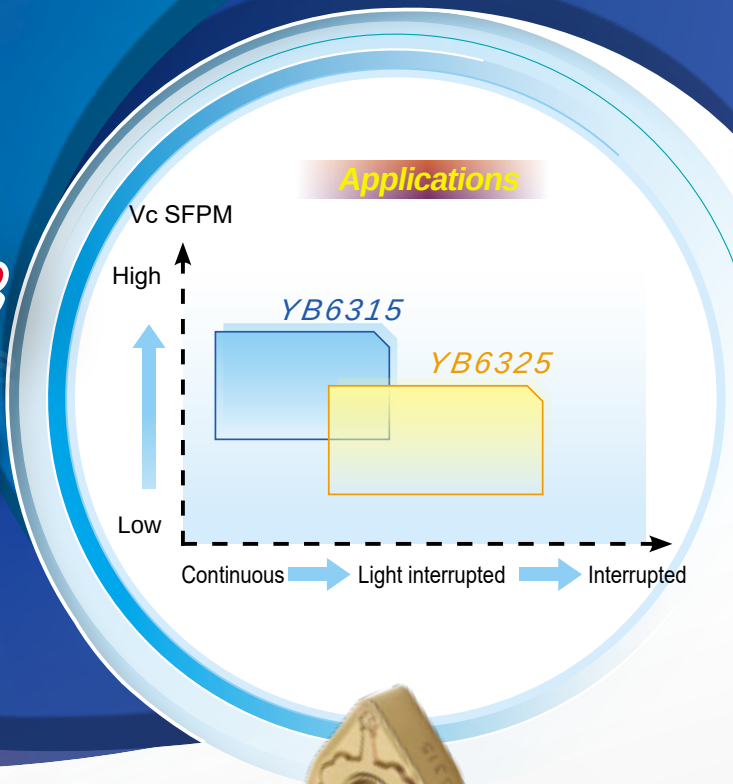
New Upgraded CVD grade for Medium to Heavy Turning Steel

YB6315 YB6325

ZHUZHOU CEMENTED CARBIDE
CUTTING TOOLS CO., LTD.

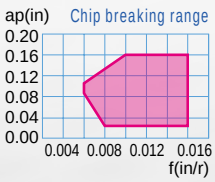
New upgraded CVD coating grade

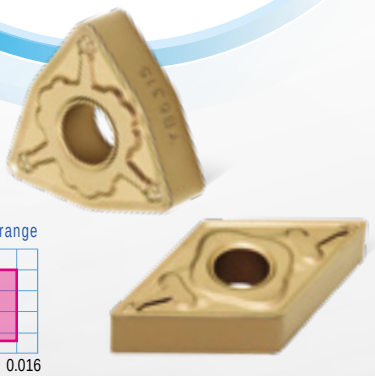
New high performance turning products for P materials



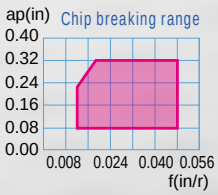
-ZMA Semi-finishing chip-breaker

- Optimized and upgraded cutting edge structure, increased tip strength and significantly improved insert machining performance.
- New chip-breaker design provides smooth chip removal and excellent surface quality.





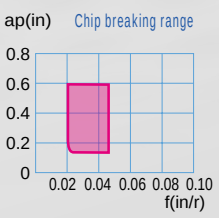
-ZR Roughing chip-breaker

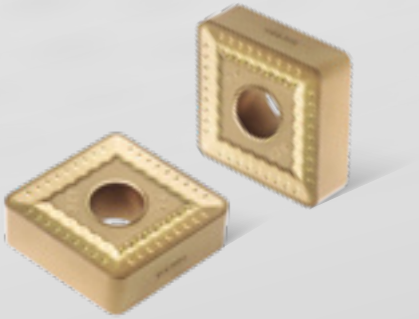


- Perfect cutting edge structure design leads to high strength, which can maintain the lowest temperature of the cutting area to meet the harsh demand of heavy processing's high temperature, high impact working conditions.
- The unique chip guide table design on the front tool face effectively guides the chips to curl steadily and naturally, perfectly balances the contradiction between chip control and wear, and maximizes the insert life.
- Combined with the latest CVD coating technology to optimize the structural details, the performance advantages of the coating are maximized.

-HPR Heavy machining chip-breaker

- M-class chip-breaker, wide cutting edge design, and strong edge make it ideal for unstable and harsh working conditions, especially such heavy machining as peeling.





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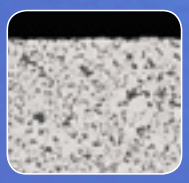
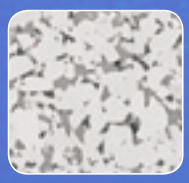


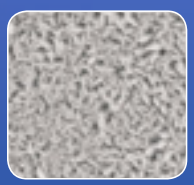


New substrate

New carbide matrix formulation with high strength, high toughness, and excellent wear resistance. The high cobalt content and finely controlled thickness of the gradient layer increase the safety of the tool during use.

Superfine grain gradient coating

Superfine crystal MT coating with gradient structure, ensuring both high toughness and excellent wear resistance.

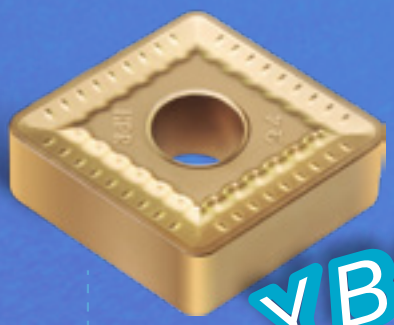


Crystal nucleus pre-implantation technology

The ultra-fine α-Al_2O_3 coating with crystal nucleation pre-implantation technology optimizes the nucleation environment of alumina coating, improves the uniformity and consistency of alumina coating, and functions great under high temperature. These features make it ideal for high-speed and high-efficiency processing.

Double oxygen gradient transition layer technology

Dioxygen gradient transition layer technology improves the coating stress state and interface state, reduces stress concentration, improves coating/substrate and coating/coating interface bond strength, and greatly increases tool stability and safety.



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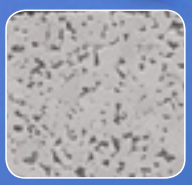


New substrate

Optimized cemented carbide components and microstructure to enhance the product's resistance to plastic deformation; precisely controlled sintering technology with a more reasonable gradient structure to increase impact resistance.

Superfine grain gradient coating

Excellent combination of MT-TiCN coating, thick Al_2O_3 coating and TiN coating with good impact resistance.

It improves the surface finish of the coating, forms the super smooth composite coating, and reduces the cutting force and lowers the crescent pits wear.

Application Case(1)

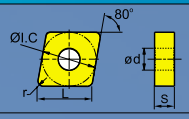
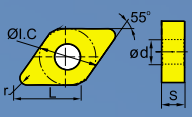
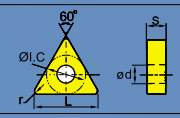
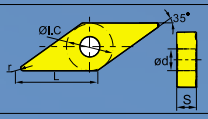
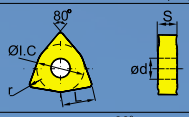
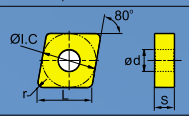
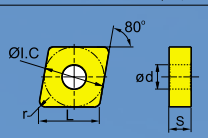
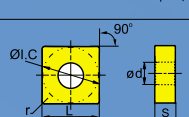
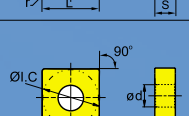
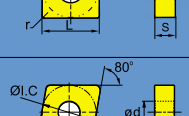
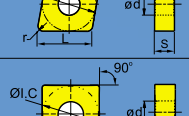
Machined parts: nuclear power parts
Workpiece material：42CrMo4V
Material hardness：HRC26-30
Use of tools：CNMM856-ZR/YB6325
Cutting parameters：Vc=360 SFPM、
ap=0.315in、f=0.047in/r
Coolant: water-cooled

Results: the cylindrical surface blank was machined into a tapered surface. Our company's -ZR chip-breaker inserts were used to machine 4 pieces. The inserts became slightly worn and reusable, while the same type of products from company A could only machine 2 pieces and the inserts were chipped.

Application Case(2)

Machined parts:
wind power components
Workpiece material：42CrMoA
Material hardness：HRC25-28
Use of tools：SNMM866-HPR/YB6315
Cutting parameters：Vc=390 SFPM、
ap=0.55~0.07in、f=0.035in/r
Coolant: dry cutting

Result: the useful life of the single-edged insert increased by 20% to be 120min with its cost reduced by 30%.

	Inserts shape		Description	Dimensions (in)					Grade	
				L	ØI.C	S	ød	r	YB6315	YB6325
-ZMA series	Semi-finish		CNMG431-ZMA	0.508	0.500	0.187	0.203	0.016	●	●
			CNMG432-ZMA	0.508	0.500	0.187	0.203	0.031	●	●
			CNMG433-ZMA	0.508	0.500	0.187	0.203	0.047	●	●
	Semi-finish		DNMG431-ZMA	0.610	0.500	0.187	0.203	0.016	●	●
			DNMG432-ZMA	0.610	0.500	0.187	0.203	0.031	●	●
			DNMG433-ZMA	0.610	0.500	0.187	0.203	0.047	●	●
			DNMG441-ZMA	0.610	0.500	0.250	0.203	0.016	●	●
			DNMG442-ZMA	0.610	0.500	0.250	0.203	0.031	●	●
			DNMG443-ZMA	0.610	0.500	0.250	0.203	0.047	●	●
	Semi-finish		TNMG331-ZMA	0.650	0.375	0.187	0.150	0.016	●	●
			TNMG332-ZMA	0.650	0.375	0.187	0.150	0.031	●	●
			TNMG333-ZMA	0.650	0.375	0.187	0.150	0.047	●	●
	Semi-finish		VNMG331-ZMA	0.654	0.375	0.187	0.150	0.016	●	●
			VNMG333-ZMA	0.654	0.375	0.187	0.150	0.031	●	●
			VNMG333-ZMA	0.654	0.375	0.187	0.150	0.047	●	●
	Semi-finish		WNMG431-ZMA	0.343	0.500	0.187	0.203	0.016	●	●
			WNMG432-ZMA	0.343	0.500	0.187	0.203	0.031	●	●
			WNMG433-ZMA	0.343	0.500	0.187	0.203	0.047	●	●
-ZR series	Roughing		CNMG643-ZR	0.760	0.750	0.250	0.313	0.047	●	●
			CNMG644-ZR	0.760	0.750	0.250	0.313	0.063	●	●
	Roughing		CNMM644-ZR	0.760	0.750	0.250	0.313	0.063	●	●
			CNMM646-ZR	0.760	0.750	0.250	0.313	0.094	●	●
			CNMM856-ZR	1.015	1.000	0.313	0.359	0.094	●	●
			CNMM866-ZR	1.015	1.000	0.375	0.359	0.094	●	●
	Roughing		SNMG644-ZR	0.750	0.750	0.250	0.313	0.063	●	●
	Roughing		SNMM644-ZR	0.750	0.750	0.250	0.313	0.063	●	●
			SNMM646-ZR	0.750	0.750	0.250	0.313	0.094	●	●
			SNMM856-ZR	1.000	1.000	0.313	0.359	0.094	●	●
			SNMM866-ZR	1.000	1.000	0.375	0.359	0.094	●	●
-HPR series	Heavy Turning		CNMM644-HPR	0.760	0.750	0.250	0.313	0.063	●	●
			CNMM866-HPR	1.015	1.000	0.375	0.359	0.094	●	●
	Heavy Turning		SNMM644-HPR	0.750	0.750	0.250	0.313	0.063	●	●
			SNMM866-HPR	1.000	1.000	0.375	0.359	0.094	●	●

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