

Mighty upgrading

Shocking show

New generation

s.

Turning products







YB6315

CVD coating grade combining double oxygen gradient transition layer technique and crystal nucleus pre-planting technique, for turning in P- materials

G Golden coating

Golden TiN coating, with good identification, reduced cutting force and tool wear.

Oltra smooth edge treatment

ith new surface treatment technology, ultra smooth surface, for superior surface quality and better cutting stability.



New substrate

New carbide substrate formula, with high strength, high toughness and outstanding wear resistance. High cobalt content, fine control of the thickness of gradient layers increased security in the process of cutting





Hyperfine gradient-coating -

Gradient structure of ultra-fine crystal MT coating, with high toughness and wear resistance.





Crystal nucleus pre-planting technology

Ultrafine $\alpha - AI_2O_3$ coating with crystal nucleus pre-planting technology optimizes the environment of alumina coating nucleation and improve the uniformity of alumina coating and consistency. High temperature performance is good, especially suitable for high-speed and efficient processing.





Ouble oxygen gradient transition layer technique

Double oxygen gradient transition coating technology improves the stress state and interface state, reduces stress concentration and improves bonding strength of coating/substrate, coating/coating interface, greatly increases the stability and security of the cutting tool.

-ZF geometry

Unique design of tool nose, sharp edge, for easy cutting, effectively reduced vibration.

- Geometry for finishing, with good chip breaking performance, ensuring chip breakage and discharge, improving surface quality.
- Perfectly matches new grade, significantly improves processing efficiency.

Workpiece material: 45 # steel (HB180) Insert: CNMG120408-ZF/YB6315 Cutting data: Vc=400m/min, f=0.15mm/r, ap=0.3mm

Cutting style:Continual dry cutting



Product of Company A

Result: Our ZF geometry machines workpiece with surface quality better than similar products of company A.

-ZM geometry

- Optimized edge design with increased strength and higher machining efficiency
- Excellent chip breaking performance, good surface quality, mainly for P- material, intermittent semi-finishing operation with high requirements on impact resistance.

Use	Precision	Geometry	Features	Chipbreaker section	Chip breaking range
Finish	м	-ZF	Geometry recommended for P- material finishing, M class double chip breaker, ideal finishing range, high machining surface quality.	Q.15 Tool nose	ap(mm) 2.00 1.50 0.00 0.50 0.00 0.05 0.10 0.15 0.20 0.25 f(mm/rev)
Swmi- finish	М	-ZM	Geometry recommended for P- material, M class double chip breaker, high edge strength, excellent chip breaking performance.	0.25 Tool nose	ap(mm) 5.00 4.00 2.00 1.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 f(mm/rev)
Rough	м	-ZR	Geometry recommended for P- material, M class double chip breaker, solves difficulties in rough machining such as cutting heat and sticky edge, with high efficiency.	0,45 Tool nose	ap(mm) 10.0 8.00 6.00 4.00 2.00 0.2 0.4 0.6 0.8 1.0 1.2 1.4 f(mm/rev)

-ZR geometry

 Perfect edge structure design, high strength, can decrease the temperature of cutting zone to the greatest extent to meet harsh working conditions of high temperature, heavy load, high impact;

 Unique design of chip guide at rake face, effectively induces stable natural curling of chips, perfectly balances the contradiction between chips and wear, prolongs insert life to the greatest extent;

Combined with the latest CVD coating technology to optimize structure details, put the performance advantages of new coating to full play.



Result: Under same working conditions, ZCC·CT products have longer tool life and superior wear resistance compared to similar products of company A.

New generation CVD coating grade for efficient turning

YB7315

New substrate New carbide substrate with optimized sintering technique, perfect collocation of binding phase and hard phase, excellent toughness and wear resistance.

Finely controled ultrafine silicon coating

Through composition optimization, coating grain is further ultra-micronized and homogenized, with more outstanding comprehensive performance, substantial increase in tool life.

Crystal nucleus pre-planting Al₂O₂ growing technology

Ultrafine Al_2O_3 coating with crystal nucleus pre-planting technology still possesses outstanding bonding strength after increasing coating thickness, ensuring machining safety.

New coating surface treatment technology

Through the fine collocation of surface coating and post-treatment technology, the insert is more suitable for high efficiency, high speed machining in K- material



YB7305/YB7315加工材料范围表

New substrate <

YB7315

YB7305



ISO



New fine grain cemented carbide substrate with optimized sintering technique; optimized combination of binding phase and hard phase brings more excellent abrasion resistance and impact resistance to substrate.

Extra thick fine-grain A O3 coating

With extremely outstanding performance at high temperatures and wear resistance, effectively improves tool life, suitable for high efficient cutting in K- material.



----Ultra fine grain **TiCN** coating

Further mercerization and homogenization of coating grain, more excellent comprehensive performance, greatly improves tool life.



Extra smooth surface

Double surface smoothness, reduces the abnormal damage of bonding, ensures stable machining, silver layer for good identification.

-TK geometry

- Geometry, new grade and unique edge design combined can maximizes impact resistance and abrasion resistance of insert and improve the cutting performance;
- Complete range of insert types and geometries, suitable for turning in cast iron and nodular cast iron.
- Wide edge improves feeding during cutting

 Wide chip pocket facilitates chip evaluation

ion Flat area (chip breaking area, wide chip pocket)

Tool point(wide edge, balanced sharpness and strength)

-TC geometry

- Geometry for K- material turning;
- Stable performance, all purpose, for finishing to roughing operations;
- Edge with special treatment, high strength, impact resistance.

Case

Workpiece material: HT300(HB200) Insert: CNMG120408-TC/YB7315 Cutting data: Vc=500m/min, f=0.2mm/r, ap=1mm Machine: Machine center

Cutting style: Continual dry cutting

Result: ZCC CT products are capable of stable efficient high-speed machining, with tool life 50% higher than products of company A under same working conditions. Inserts of company A are easily broken.



YB9320

New generation PVD coating grade, new product for M- material turning



Atomic rearrangement technology realizes orderly arrangement of different coating materials to achieve the perfect matching of hardness and toughness effectively solves heat instability at coating interface, improves the high temperature performance of coating.

High toughness substrate and TiAIN nanometer multilayer coating, unique ion etching technology, strengthen the edge and improve the bonding strength between coating and substrate.

Advanced surface treatment technology optimizes stress distribution, for superior comprehensive performance.

-ADF geometry

- Optimized geometry for perfect chip control in larger data range;
- Precision grinding technique can ensure high dimensional and indexing accuracy;
- Specially designed rake face structure ensures insert strength and greatly reduces cutting resistance
- Advanced cutting edge technology and after treatment of coating. excellent surface finish

2.50

2.00 1.50

1.00

0.50

0.00

Case

Machined part: Flange

Workpiece material: Stainless steel 316 (HRC 30)

Operation: External and end face turning

Machine: Machine center

Insert: YB9320/CNMG120408-ADF

Cutting data: Vc=160m/min, f=0.2mm/r, ap=1mm

Result : ZCC[.]CT products produce significantly better surface finish compared with products of company A,. with tool life 30% longer than other products. Life comparison



-AHF geometry

 Unique design of vibration damping geometry, for good surface quality even with slender shaft parts 0.50



Based on the advanced chip control idea, all-purpose geometry

Ground insert with significantly enhanced accuracy;

Positive angle insert with sharper edge than - ADF geometry, easy and soft cutting; Optimized edge material ensures perfect balance of edge strength and sharpness.

