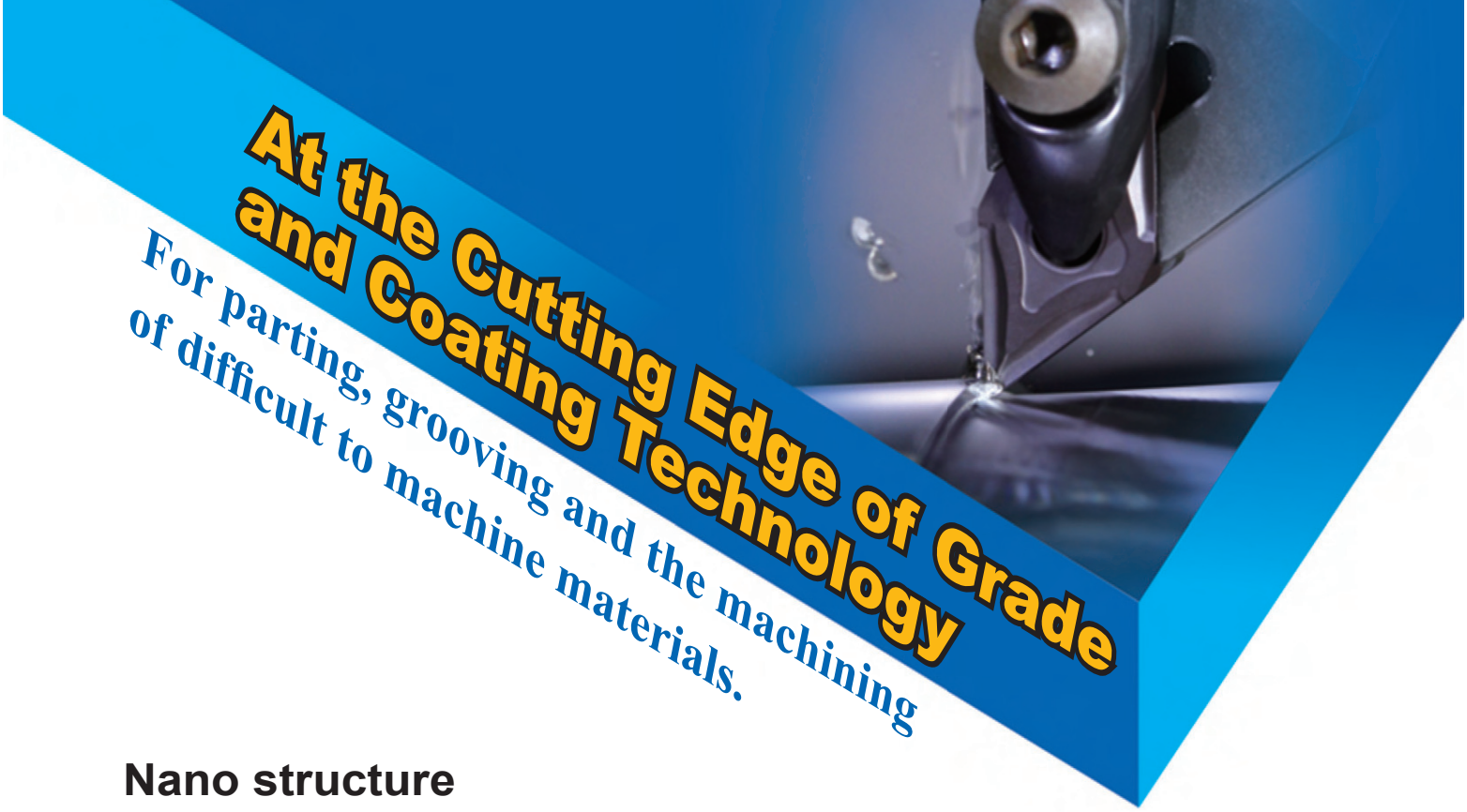
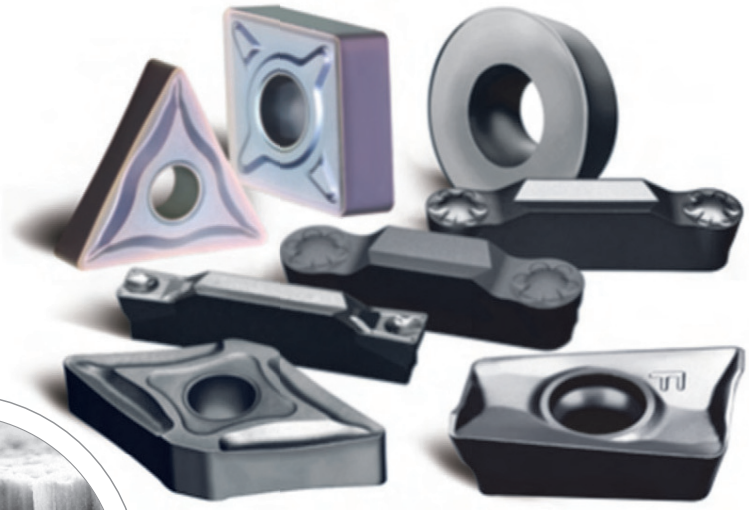


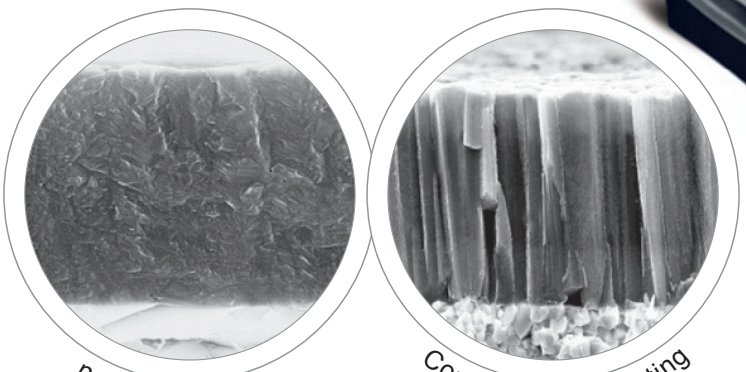
At the Cutting Edge of Grade and Coating Technology

For parting, grooving and the machining of difficult to machine materials.

Nano structure nc-TiAlN coating grade

- Smooth coating surface results in less friction and easier chip flow.
- Special Nano structure coating ensures higher toughness, hardness, and bonding to substrate.
- Thermal and chemical stability of coating allow cutting edges to remain reliable throughout cut.





nc—TiAlN coating

Common TiAlN coating

YBG102 YBG202 YBG205 YBG302

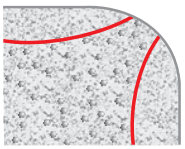
YBG105 YBG212

Second generation of YBC

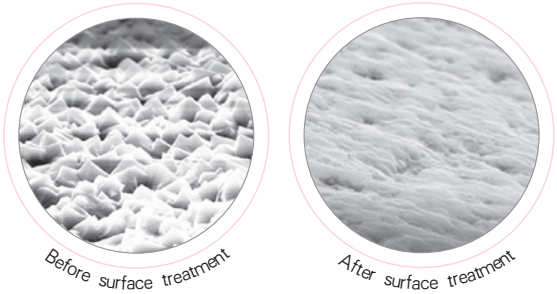
BLACK DIAMOND INSERTS

Achieving both higher cutting speed and longer tool life

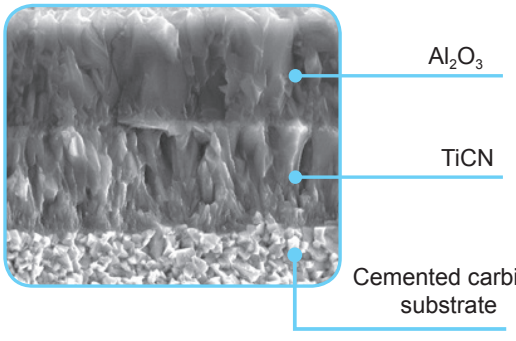
- Perfect unification of toughness and anti-plastic deformation.
  Specially designed cutting edge with “skeleton” realizes perfect unification of toughness and anti-plastic deformation.



- Roughness of insert surface is improved after special treatment on surface, which effectively reduces cutting forces, prevents workpiece adhering to surface of inserts and improves operation stability of inserts.



- The perfect combination of fibrous TiCN and fine grain Al_2O_3 obviously improves abrasion resistance and anti-breakage of inserts.



YBC152

Thick TiCN and thick Al_2O_3 coatings improve the impact toughness and abrasion resistance, which makes it suitable for finishing and semi-finishing of steel at high speed. Cutting speed can increase by more than 25%, while the tool life can increase by more than 30% at the same cutting speed.

YBC252

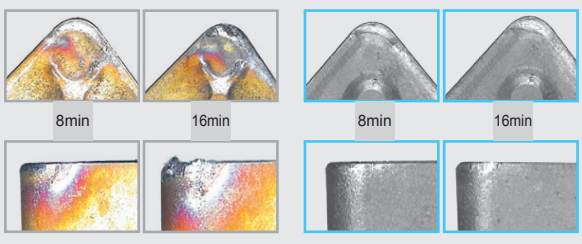
Comprising of thick TiCN and thick Al_2O_3 coatings, the grade has high capability against plastic deformation and good hardness of cutting edge. It is preferred grade for machining of steel from finishing to roughing. Under the same cutting conditions, the cutting speed can be increased by more than 25%, while the tool life can be 30% longer under the same cutting speed.

YBC352

Thickness TiCN and Al_2O_3 coating, with strongest toughness and plastic deformation resistance, the ideal grade for high efficient steel rough machining under the bad condition.

Test comparison of inserts abrasion

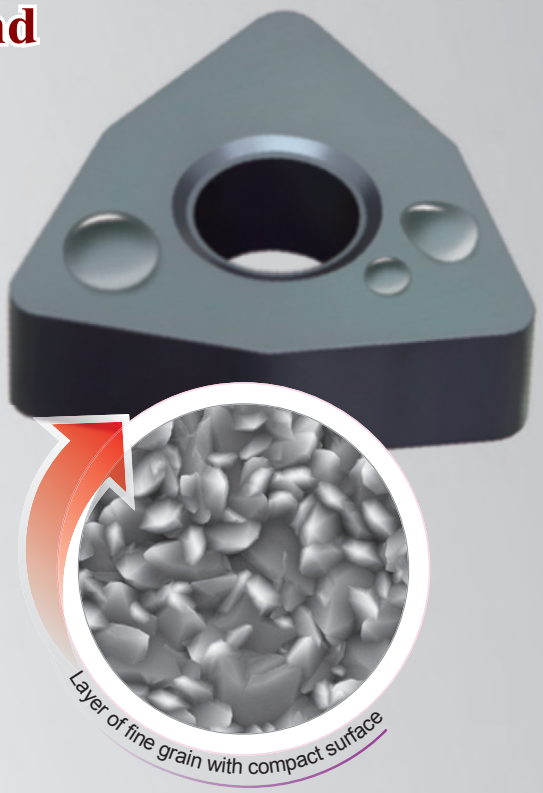
Workpiece material：45#steel
Inserts：CNMG432-DM
Cutting parameters：Vc=1300SFPM
a_p=0.04(inch) fn=0.008(inch/r)



BLACK DIAMOND INSERTS YBD

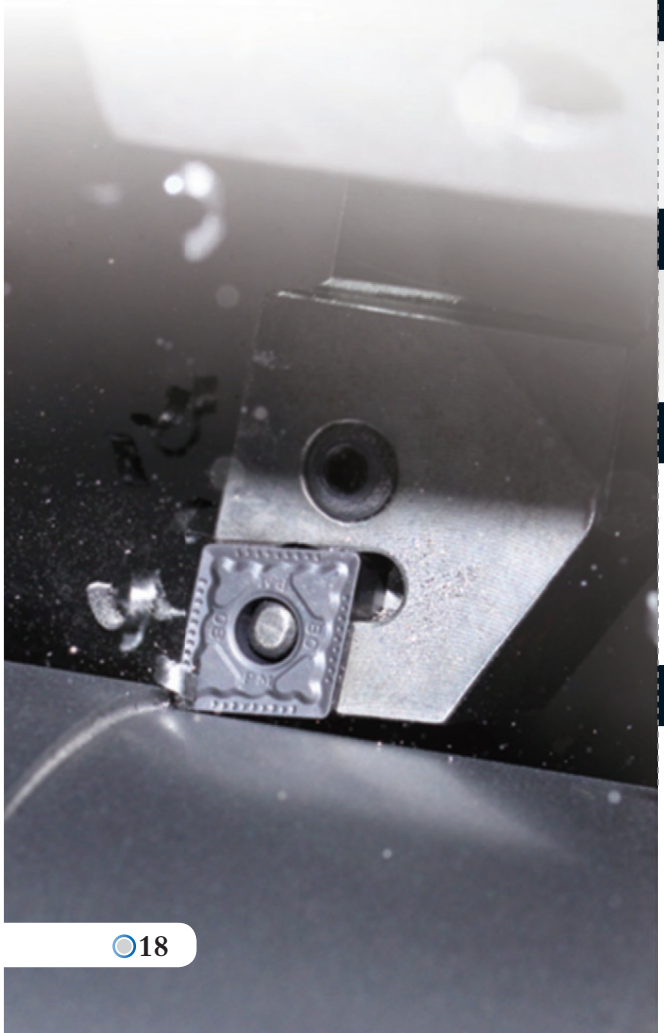
First choice for high-efficiency and highspeed machining of cast iron

- The combination of thick coating and substrate with good hardness and impact resistance gives the inserts excellent impact resistance and stability under high temperature, and improves wear resistance of inserts. Inserts also satisfy the requirements of high speed and high feed rate when machining cast iron.
- The appearance of shining full black is easily identified.



Significant results

- Working efficiency has been improved. Both the coating and the substrate are suitable for machining cast iron at high speed and high feed rate. Cutting speed can be increased by 30% to 40%.
- Cost is reduced as tool life is increased by 40%-50%.
- High machining stability.



YBD052

CVD coated grade, which is characterized by super fine grain and smooth surface, is the combination of hard substrate and coating (extra thick Al_2O_3 + thick TiCN). The grade is optimized for best wear resistance when machining gray cast iron at high speed under dry condition.

YBD102

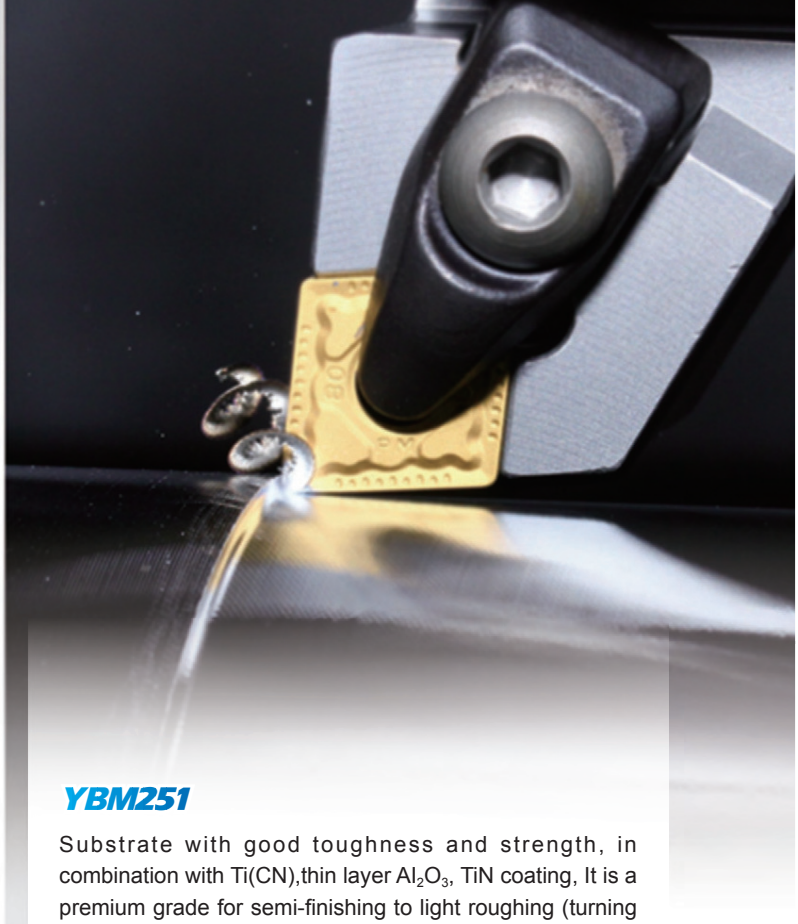
CVD coated grade, which is the combination of hard substrate and coating (thick Al_2O_3 + thick TiCN), shows excellent wear resistance and impact resistance when machining nodular cast iron at high speed.

YBD152

CVD coated grade, which is the combination of hard substrate and coating (medium thick Al_2O_3 + thick TiCN), has good flaking resistance. It is suitable for turning of cast iron at high speed, and light intermittent cutting can be supported even at moderate speed. It is also suitable for milling of cast iron.

YBD252

CVD coated grade, which is the combination of hard substrate and coating (medium thick Al_2O_3 + thick TiCN), achieves the balance between wear resistance and toughness. It is suitable for wet milling of cast iron, which requires toughness (such as nodular cast iron) at moderate or low speed. It is also suitable for intermittent turning.



YBC151

Substrate with special structure, in combination with Ti(CN), thick layer Al_2O_3, and TiN coating. High resistance to diffusion of rake face and resistance to plastic deformation it is good for finishing and semi-finishing (turning as well as boring) of stainless steel.

YBC251

Coated carbide grade with special strength and toughness, in an optimal combination with MT-Ti(CN), thick layer Al_2O_3, and TiN coating. Suitable grade for wide application. It is recommended for the finishing, semi-finishing and light roughing of steel, cast steel and stainless steel.

YBC351

Substrate with high strength and resistance against plastic deformation,in combination with MT-Ti(CN), thick layer Al_2O_3,TiN coating.It is suitable for light roughing and roughing steel,cast steel and stainless steel.

YBM151

Substrate with special matrix, in combination with Ti(CN), thick layer Al_2O_3, and TiN coating. With the resistance to rake face diffusion and plastic deformation, it is good for finishing and semi-finishing (turning as well as boring) of stainless steel.

YBM251

Substrate with good toughness and strength, in combination with Ti(CN),thin layer Al_2O_3, TiN coating, It is a premium grade for semi-finishing to light roughing (turning and boring) of stainless steel at continuous and intermittent machining conditions.

YBM253

Ideal grade for turning of stainless steel with high cutting depth and high feed rate under bad working condition.

- Ultra-fine grain coating technology provides better wear resistance and toughness;
- Improved remain internal stress design ensures good toughness and anti-cracking performance;
- Polishing treatment on coating surface makes it suitable for cutting adhesive materials.

Main grades and applications

YNG151

TiCN based cermets, of which the grains are refined with a special process with more even grain size. The combination of cemented carbide hard phase and the binder phase is even more strengthened, further improving the wear resistance and lifetime of the inserts. They are suitable for the finishing and super finishing of steel, stainless steel and cast iron.

YNG151C

TiCN based cermets+Nano PVD coating, of which the surface is specially pre-treated with an even and smooth surface. The friction coefficient of the workpiece in relation to the insert is reduced, causing good chip flow, increased wear resistance, and prolonged lifetime of insert. They are suitable for the finishing and fine finishing of steel materials, stainless steel and cast iron.