ViRiAL®
Virial, Ltd

Indexable Faceted Cutting Inserts (IFCI) based on cubic boron nitride (CBN)

Improved productivity of metal machining

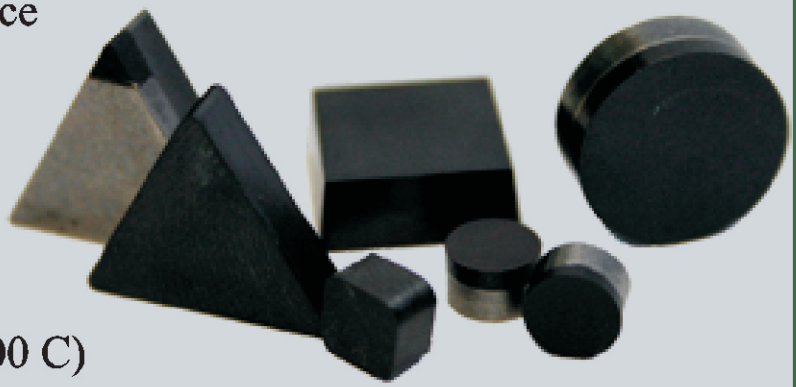
Improved productivity of super hard materials machining

Replacement of low-productive operations of rough grinding

Processing without coolants application

Main advantages of CBN-based composite:

- high hardness and wear resistance (inferior only to diamond)
- impact strength
- chemical inertness
- high thermal stability (up to 1300 C)



Advantages of CBN-based IFCIs:

- possibility to use heavier duty cutting regimes
- wide range of machineable workpieces (hardness up to 30 - 90 HRS)
- possibility of thread cutting in hardened steels
- attractive price as compared to commercially available alternatives

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IFCI based on cubic boron nitride

Application of CBN-based IFCIs offers the greatest efficiency gains when machining the following materials:

- •Hardened steel > 50 HRC (carburized steel, flame and induction hardening)
- • Ball bearing steels (of type 100 Cr 6)
- • Spring steels (of types C145, 340 CrMo4, 50 CrY4, 58 CrY4)
- • High-speed steels (HSS)
- • Cold technology steels (of type X165CrMo12 (1.2601), (1.3207)
- • Hot technology steels (of type X 210Cr12 (1.2080))
- • Chilled cast iron ~ 50 HRC, parts of mould castings and double-layer molding
- • Special chilled cast iron - 50 HRC
- • N1 - “Hard" (chrome-nickel grade of cast iron with high impact strength and high wear resistance)
- • Grey cast iron alloyed with chrome
- • High wear resistant grades of cast iron with hardness up to 600 HB

Generalized list of IFCIs produced from CBN:

- • Monolithic cutting inserts - for large material removals
- • Double-layer cutting inserts - higher impact strength
- • Inserts with tips from CBN - economical option

Shape	ISO coding		Dimensions
Circle	RNMN RCMN RPMN	RNNN RCNN RPNN	Diameter: 5,56 - 12,7 Thickness: 3,18 - 6,35
Rhombus	CNMN CCMN CPMN	CNNN CCNN CPNN	Diameter of inscribed circle: 5,56 - 9,52 Thickness: 3,18 - 4,76 Tip radius: 0,2 - 1,2
Square	SNMN SCMN SPMN	SNNN SCNN SPNN	Diameter of inscribed circle: 5,56 - 12,7 Thickness: 3,18 - 4,76 Tip radius: 0,2 - 1,2
Triangle	TNMN TCMN TPMN	TNMN TCMN TPMN	Diameter of inscribed circle: 5,56 - 12,7 Thickness: 3,18 - 4,76 Tip radius: 0,2 - 1,2

We also offer other customized dimension types in accordance with ISO

It may be possible to produce IFCIs according to customer`s drawings

Virial Ltd experts will help you to develop special tools for your specific machining problems

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