

FLIP TIP™
CBN
INSERTS

J&M

DIAMOND TOOL, INC.

ABOUT FLIP TIP™ CBN INSERTS

These unique, disposable CBN negative rake inserts have two cutting edges, resulting in a substantial cost saving over other inserts.

The unique J&M design tips the insert the length of the radius. The tool is first used with the top cutting edge, then the insert is “flipped” to the bottom edge when the top edge is worn. Because each cutting edge has the same high quality CBN tip and finish, you realize twice the service from a single insert. Various grades of CBN are available.

These disposable inserts were developed for finishing cuts of .015 or less in hardened steel and superalloys. Standard J&M CBN inserts and full face inserts are available for heavier cutting applications.



Exact geometries are ground on PCD tools with our sophisticated tool grinders.

CUBIC BORON NITRIDE

Cubic boron nitride (CBN) is an artificially synthesized material exceeded in hardness only by diamond. Unlike diamond, CBN is stable under conditions of high temperature (up to 1000°C) normally created when machining hardened ferrous or superalloy materials.

Like polycrystalline diamond, CBN is available in many shapes and sizes.

Discs are available up to 42mm diameter.

And CBN is

available in different grades for different applications.

CBN tools permit metal cutting at feeds and speeds much higher than with conventional cutting tool materials. CBN tools also turn, bore and face hard materials, which otherwise can be formed only by grinding. Because CBN tools maintain a sharp cutting edge, surface finishes are excellent, close tolerances are easy to maintain, and dramatic productivity increases can be expected.

Materials recommended for cutting with CBN:

Alloy steel (45-68 RC)	Moly chrome steel rolls
Carbon tool steel (45-68 RC)	Inconel 600
Die steel (45-68 RC)	Rene
High speed steel (45-68 RC)	Incoloy
Chilled cast iron	Monel
Ni Hard	Stellite
Forged steel	Colmonoy
Mechanite iron	Waspoloy

CBN GRADES AVAILABLE

J & M GRADE	APPLICATION
1000	Most cast iron
2000	Continuous cutting hardened steel
2500	Hardened steel (interrupted cut)
3000	Hardened steel (severely interrupted cut)
5200	Nodular iron (continuous cutting)
5500	Nodular iron (interrupted cut)
6000	Super alloys, Ni/Co base alloys

STANDARD CBN FLIP TIP INSERTS

CNMA-431 FT	SNMA-433 FT	TNMA-222 FT
CNMA-432 FT	TNG-221 FT	TNMA-322 FT
CNMA-433 FT	TNG-222 FT	TNMA-331 FT
DNMA-431 FT	TNG-321 FT	TNMA-332 FT
DNMA-432 FT	TNG-322 FT	TNMA-431 FT
DNMA-433 FT	TNG-332 FT	TNMA-432 FT
SNG-322 FT	TNG-431 FT	TNMA-433 FT
SNG-422 FT	TNG-432 FT	VNMA-331 FT
SNMA-322 FT	TNG-433 FT	VNMA-332 FT
SNMA-432 FT	TNMA-221 FT	VNMA-432 FT



EDGE PREPS

A standard edge prep is put on all inserts. Special edge prep is available for special applications.

GRADE	ANGLE	WIDTH	
Grade 1000	15° K Land	.002-.004"	No hone
Grade 2000	25° K Land	.004-.006"	Light hone
Grade 2500	25° K Land	.004-.006"	Light hone
Grade 3000	25° K Land	.004-.006"	No hone
Grade 5200	15° K Land	.004-.006"	No hone
Grade 5500	15° K Land	.004-.006"	No hone
Grade 6000	20° K Land	.004-.006"	Light hone



RECOMMENDED SPEEDS AND FEEDS

MATERIAL	SPEED (SFM)	FEED RATE (IPR)	DEPTH OF CUT (inches)
Carbon Steel	200-500	.008 Max.	.020 Max.
Bearing Steel	200-500	.008 Max.	.020 Max.
Alloy Steel	200-500	.008 Max.	.020 Max.
Die Steel	160-350	.008 Max.	.020 Max.
Tool Steel	160-350	.008 Max.	.020 Max.
High Tensile Cast Iron	200-500	.060 Max.	.020 Max.
Chilled Cast Iron	130-260	.032 Max.	.020 Max.
Grey Cast Iron	1000-2600	.020 Max.	.020 Max.
Powdered Metal	500-650	.016 Max.	.020 Max.
Inconel	500-650	.006 Max.	.020 Max.
Rene 42	500-650	.006 Max.	.020 Max.
Rene 77	450-550	.006 Max.	.020 Max.
Incoloy	750-900	.006 Max.	.020 Max.
Monel	550-650	.006 Max.	.020 Max.
Stellite	550-650	.006 Max.	.020 Max.
Colmonoy	550-650	.003 Max.	.020 Max.
Waspoly	550-650	.003 Max.	.020 Max.



MATERIAL	RECOMMENDED USE OF CBN GRADES	MATERIAL	RECOMMENDED USE OF CBN GRADES
Alloy steels (45-68 RC)	2000, 2500, 3000	Moly chrome steel rolls	6000
Carbon tool steels (45-68 RC)	2000, 2500, 3000	Inconel 600	6000
Die steel (45-68 RC)	2000, 2500, 3000	Rene	6000
High speed steel (45-68 RC)	2000, 2500, 3000	Incoloy	6000
Chilled cast iron	1000	Monel	6000
Nodular cast iron	5200, 5500	Stellite	6000
Ni Hard	1000, 6000	Colmonoy	6000
Forged steel	2000, 2500	Waspoly	6000





*All J&M tools — CBN, polycrystalline, and natural diamond
— are made in East Providence, Rhode Island, USA.*

ABOUT J&M

J&M Diamond Tool, Inc. specializes in the design and manufacture of polycrystalline and natural diamond tooling, diamond dressing and cleaving tools, diamond scribes and engravers, and miniature carbide tooling.

Besides our regular lines, we constantly design and manufacture custom parts for many applications. Our Coneset affiliate, located on-site, specializes in vacuum bonded diamond/steel adherence, and the manufacture of small diamond styli.

Please send for our complete catalog and price list.



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