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Hard Part Turning Made Easy

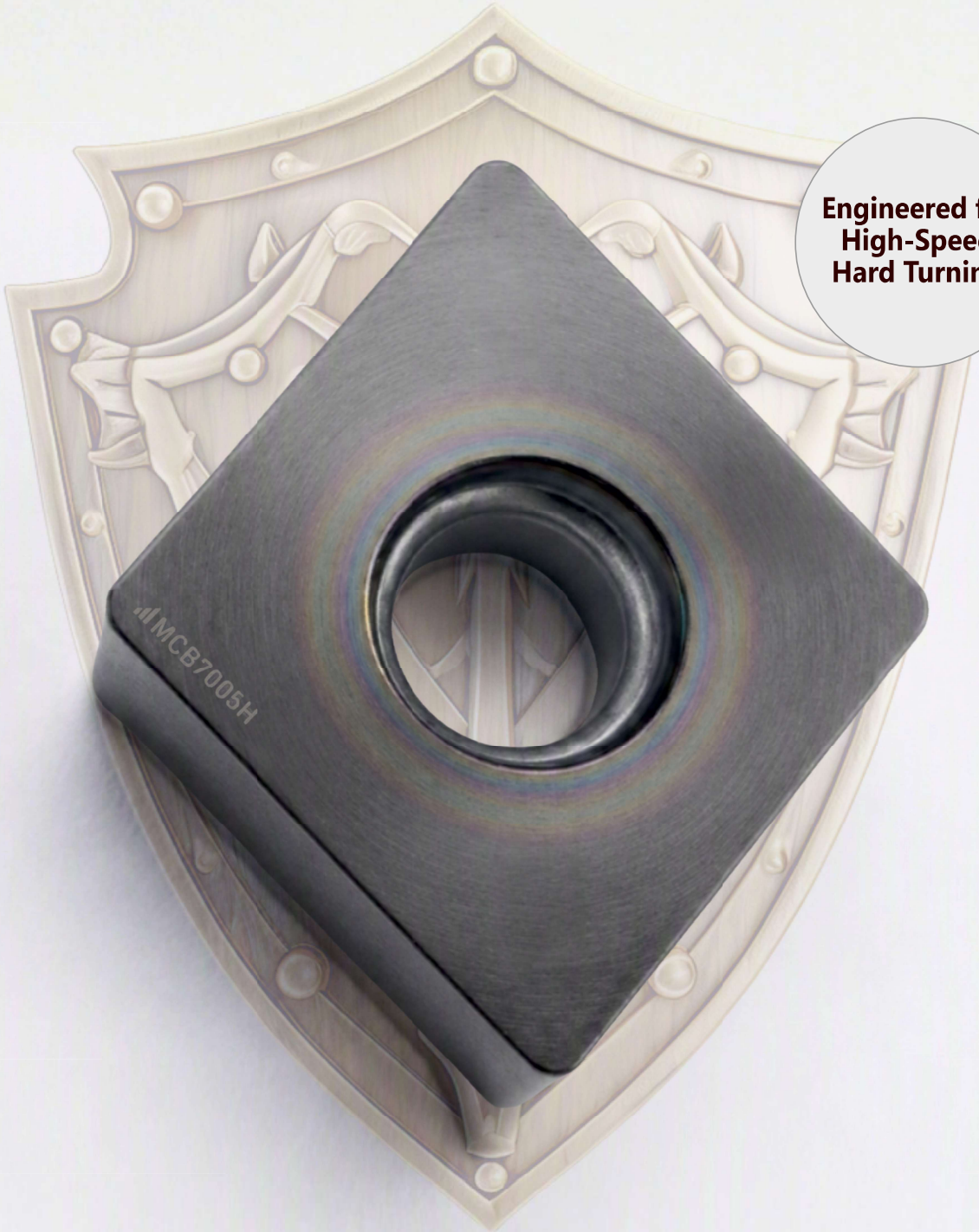
Next-Generation Coated CBN Grade

MCB7005H

ISO H

with unique KAVACH surface solution

Made in Bharat



Engineered for High-Speed Hard Turning

Brochure/MTTL/2025/001/26

MCB7005H – The Wear Resistance CBN Champion

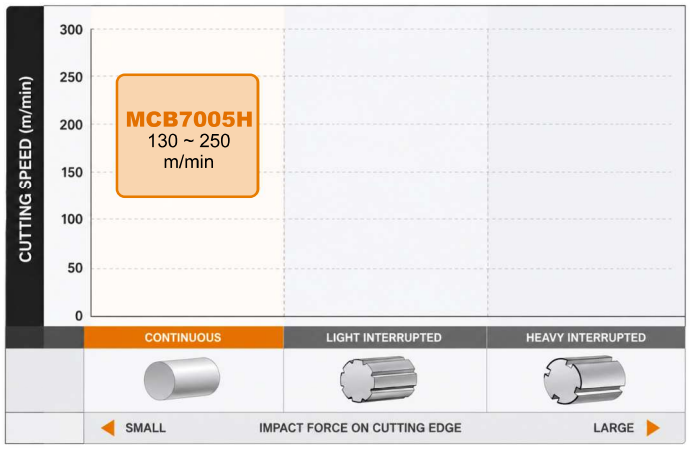
Next Generation Coated CBN grade for High Speed Continuous Hardened Steel Machining.

- **Optimized CBN Substrate** for exceptional wear resistance in continuous finishing.
- **Ultra-fine CBN Grain Structure** ensures excellent edge integrity and superior surface finish.
- **Ceramic Binder** supports stable cutting edge performance at high speeds.
- **Excellent resistance** to flank wear, enabling higher cutting speeds and longer tool life.
- **Consistent dimensional accuracy** throughout the insert life.



(Structure of MCB7005H)

Application Range - ISO H05



Engineered for high cutting temperatures and continuous machining, **MCB7005H** delivers exceptional wear resistance, extended tool life, and outstanding surface finish for maximum productivity.

Key Benefits:

- Exceptional Wear Resistance
- Enhanced Coating Support
- Higher Cutting Speeds
- Consistent Dimensional Accuracy
- Superb Surface Finish

RECOMMENDED Cutting parameters

Work material	Application	Grade	Cutting parameters								
			Ap (mm)			Feed (mm/rev)			Speed (m/min)		
			Min.	Ideal	Max.	Min.	Ideal	Max.	Min.	Ideal	Max.
ISO H	H05	**MCB7005H**	0.05	0.12	0.30	0.05	0.12	0.50	130	170	250

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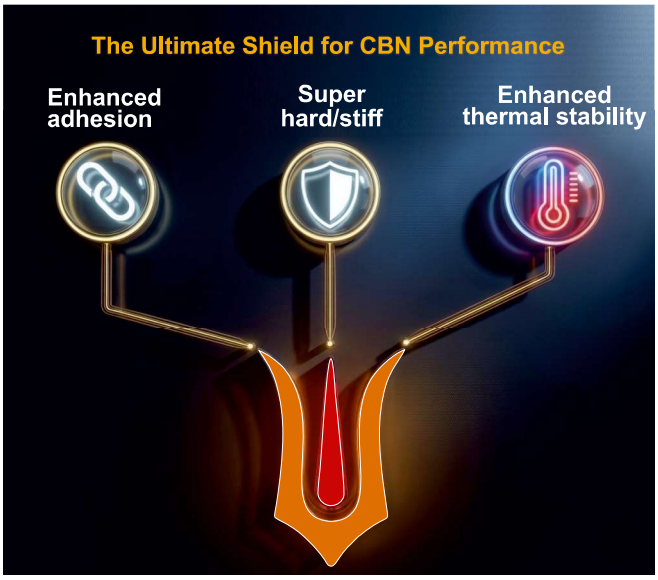
MADE IN BHARAT MADE IN

Introducing

KAVACH Surface Solution

Inspired by the Sanskrit word **KAVACH**, meaning "**Shield**," our **next-generation surface solution**, is engineered with advanced CBN coating to protect where it matters most. **KAVACH** uniquely combines **exceptional hardness with outstanding toughness - two properties that rarely coexist in a single coating.**

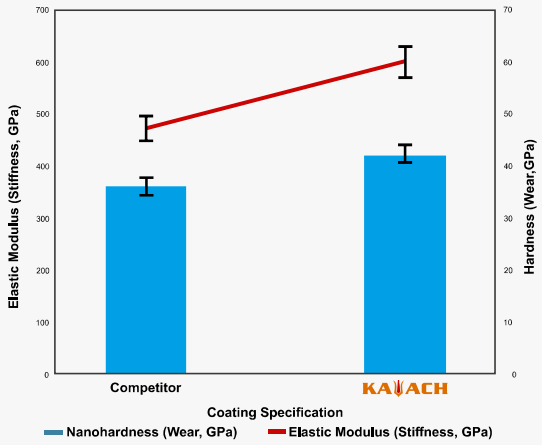
- **Shield Against Wear**
  Exceptional wear resistance for prolonged performance at high cutting temperatures.
- **Shield Against Breakage**
  Superior toughness minimizes edge chipping and unexpected insert failure.
- **Shield Against Short Tool Life**
  Long-lasting cutting edges deliver more components per insert and lower tooling costs.
- **Shield for Superior Surface Finish**
  Maintains cutting-edge integrity to produce consistent, high-quality surface finishes throughout tool life.



Not just a coating - it's an innovation in CBN Surface Engineering Technology

KAVACH doesn't just coat the cutting edge, it becomes an integral part of it. Its exceptional adhesion, verified through **indentation and scratch testing**, delivers lasting protection against delamination, enabling **superior wear resistance**, **longer tool life** and **uncompromised machining performance.**

Mechanical Properties



Kavach achieves a rare balance of high nano hardness and superior elastic modulus, delivering exceptional wear resistance, outstanding edge stability, and longer tool life in demanding machining applications.

Nano Scratch Test



Competitor



KAVACH

• Extensive coating damage	• Minimal coating damage
• Edge chipping observed	• No visible edge chipping
• Higher scratch-induced failure	• Superior scratch resistance.

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Success Case

MCB7005H - the new benchmark of CBN performance in Hard Part Turning!

Application : Facing

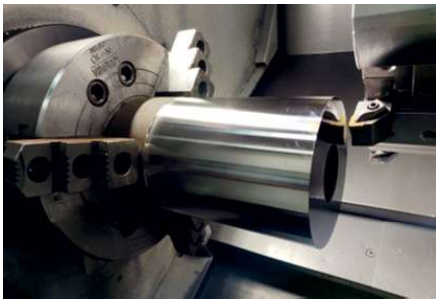
Hardness : 55-58 HRC

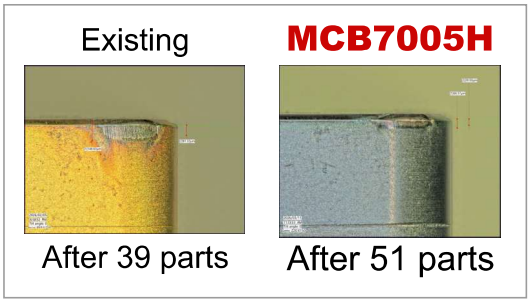
EN24 (ISO H)

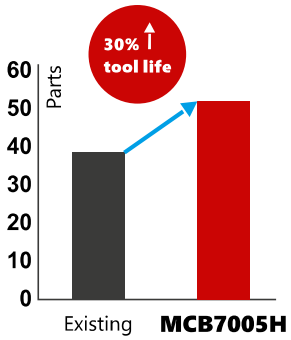
Insert: 4NC-CNGA120408-MCB7005H

Vc=180m/min, f=0.10mm/rev, ap=0.2mm, Dry

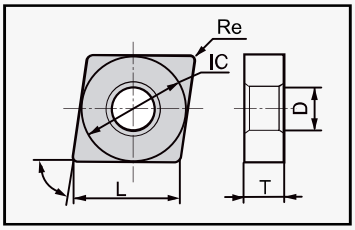
Customer benefits:
- **Longer Tool Life**
- **Better Surface Finish**
- **Lower Cost per Component**







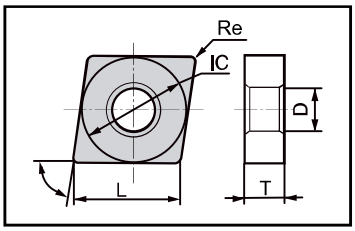
Product range



Stocked - ● Non-stocked - ○ **(All dimensions are in mm)**

Shape	Description	Edge Geometry	No. of cutting edges	Re Nose Radius	MCB 7005H	IC Inscribed Circle	T Thickness	D Hole Dia.
Positive inserts								
C 80°	2NC-CCGW060202	STD	2	0.2	●	6.35	2.38	2.8
	2NC-CCGW060204	STD	2	0.4	●	6.35	2.38	2.8
	2NC-CCGW09T304	STD	2	0.4	●	9.525	3.97	4.4
	2NC-CCGW09T304WH	WH	2	0.4	●	9.525	3.97	4.4
	2NC-CCGW09T308	STD	2	0.8	●	9.525	3.97	4.4
	2NC-CCGW09T308WG	WG	2	0.8	●	9.525	3.97	4.4
	2NC-CCGW09T308WH	WH	2	0.8	●	9.525	3.97	4.4
D 55°	2NC-DCGW11T302	STD	2	0.2	●	9.525	3.97	4.4
	2NC-DCGW11T304	STD	2	0.4	●	9.525	3.97	4.4
	2NC-DCGW11T304LS	LS	2	0.4	●	9.525	3.97	4.4
	2NC-DCGW11T308	STD	2	0.8	●	9.525	3.97	4.4
T 60°	3NC-TPGW110304	STD	3	0.4	●	6.35	3.18	3.4
	3NC-TPGW110308	STD	3	0.8	●	6.35	3.18	3.4
V 35°	2NC-VBGW160404	STD	2	0.4	●	9.525	4.76	4.4
	2NC-VBGW160412	STD	2	1.2	●	9.525	4.76	4.4

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Stocked - ● Non-stocked - ○ **(All dimensions are in mm)**

Shape	Description	Edge Geometry	No. of cutting edges	Re Nose Radius	MCB 7005H	IC Inscribed Circle	T Thickness	D Hole Dia.
Negative inserts								
C 80°	2NC-CNGA120408	STD	2	0.8	●	12.7	4.76	5.16
	2NC-CNGA120408WG	WG	2	0.8	●	12.7	4.76	5.16
	2NC-CNGA120412	STD	2	1.2	●	12.7	4.76	5.16
	4NC-CNGA120404	STD	4	0.4	●	12.7	4.76	5.16
	4NC-CNGA120404WG	WG	4	0.4	●	12.7	4.76	5.16
	4NC-CNGA120408	STD	4	0.8	●	12.7	4.76	5.16
	4NC-CNGA120408WG	WG	4	0.8	●	12.7	4.76	5.16
	4NC-CNGA120408WH	WH	4	0.8	●	12.7	4.76	5.16
D 55°	2NC-DNGA150612	STD	2	1.2	●	12.7	6.35	5.16
	4NC-DNGA150408	STD	4	0.8	●	12.7	4.76	5.16
V 35°	3NC-TNGA160404	STD	3	0.4	●	9.525	4.76	3.81
	3NC-TNGA160408	STD	3	0.8	●	9.525	4.76	3.81
	6NC-TNGA160408	STD	6	0.8	●	9.525	4.76	3.81
W 80°	6NC-WNGA080408	STD	6	0.8	●	12.7	4.76	5.16
	6NC-WNGA080408WH	WH	6	0.8	●	12.7	4.76	5.16

*Other ISO shapes and sizes are also available. Contact MTTL representative.

Geometry matrix

	STD	L type	H type	Wiper
Insert type – Negative / Positive				
Notation	-	LS	HS	WG/WH
ISO Specification	S01225	S00515	S01730	S01215

Powered by

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