

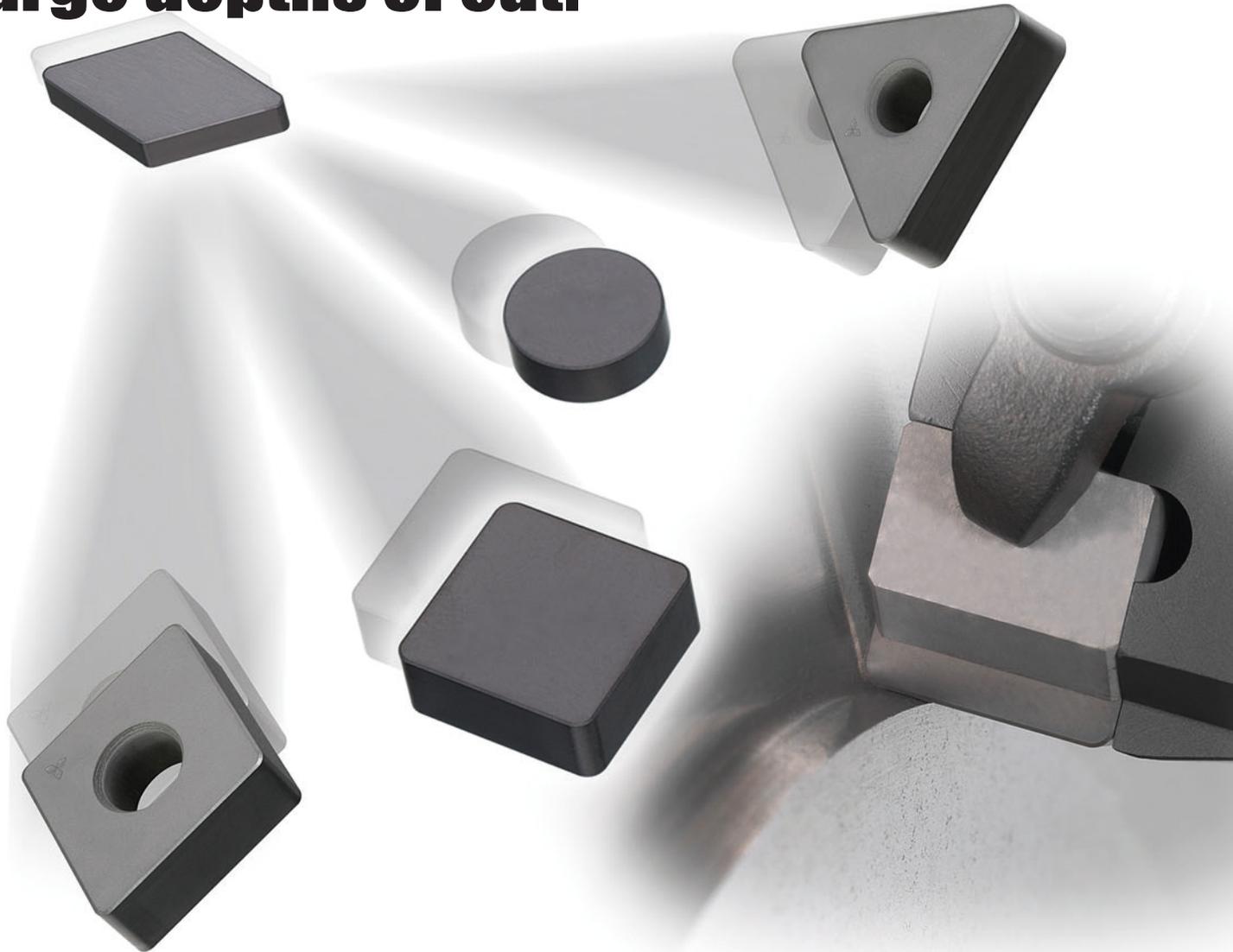
Solid CBN Grade for Cast Iron and Sintered Alloy

MBS140

Series
Expansion

Good balance of wear and fracture resistance
from the high-performance sintering technology.

**New solid CBN for improved
cast iron machining.
High-speed machining at
large depths of cut.**



Solid CBN Grade for Cast Iron and Sintered Alloy

MBS140

100% Solid CBN structure

For highly efficient machining at large depths of cut

Inserts made entirely of CBN do not limit the depth of cut. For the high speed and efficiency of CBN finishing but now also for roughing applications.

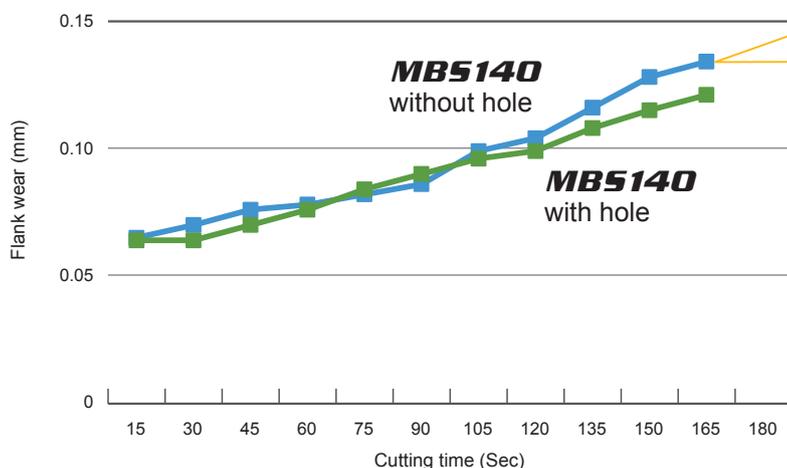
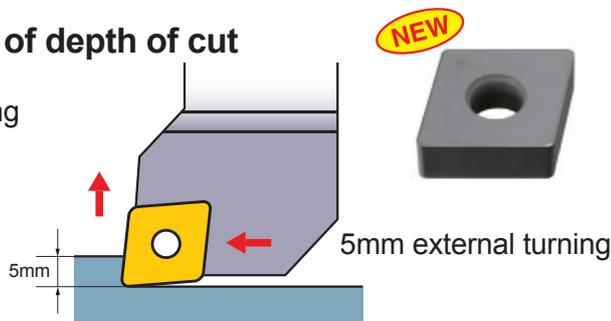
Balance of wear and fracture resistance

The use of CBN particles and a newly developed special binder delivers high wear resistance. Mitsubishi's unique high-performance sintering technology gives high fracture resistance.

Addition of insert series with hole

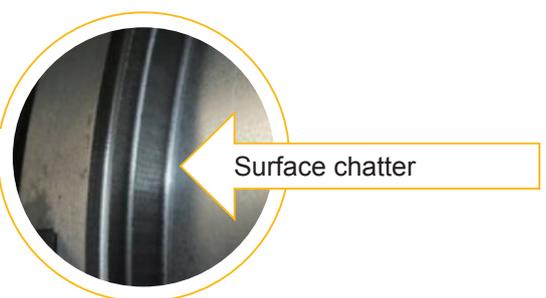
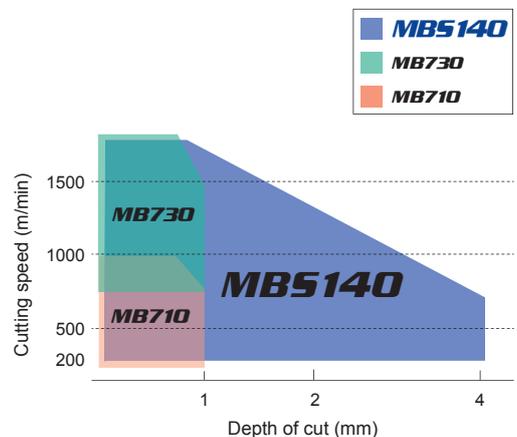
Comparison of depth of cut

5mm face turning



Application range

for higher efficiency machining

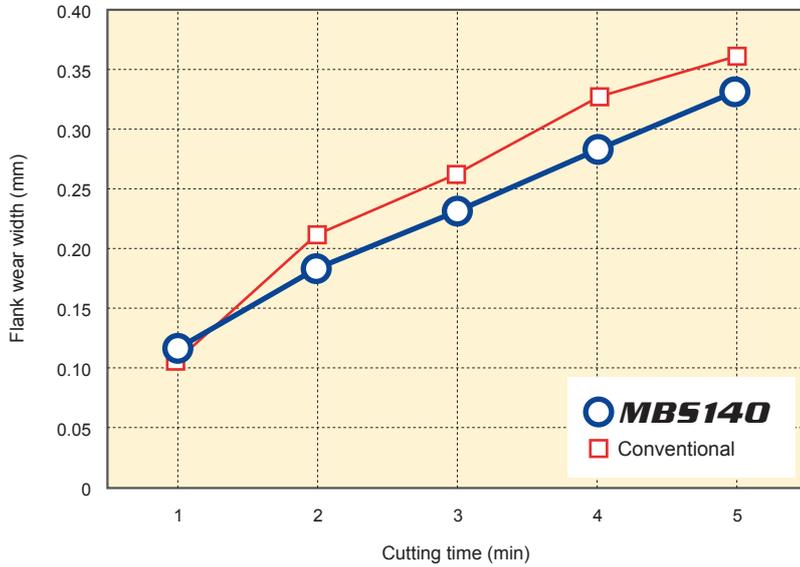


<Cutting Conditions>

- Workpiece : FC250 (DIN GG25)
- Insert : CNGA120408/CNGN120408
- Holder : Double Clamp Byte
- Cutting Speed : 400m/min
- Feed : 0.05mm/rev
- Depth of Cut : 5.0mm
- Dry Cutting

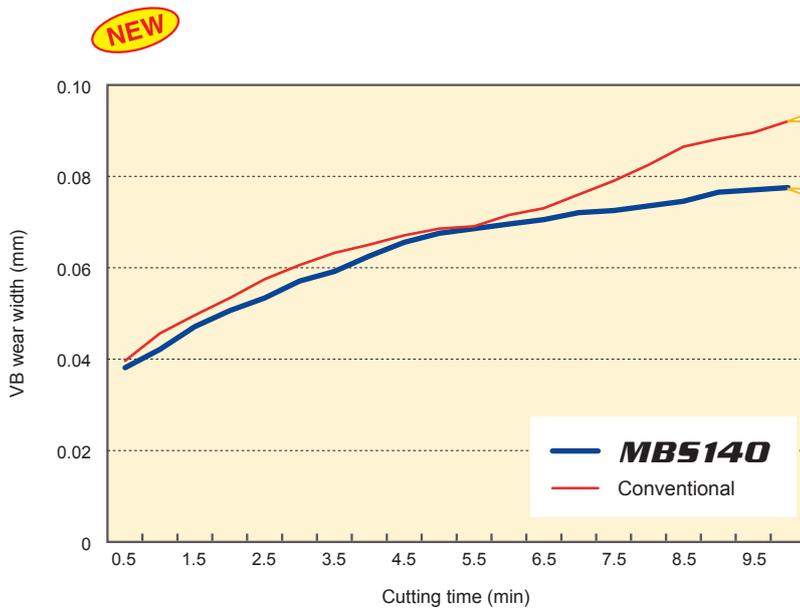
Vibration occurred when using an insert without hole after 165 sec due to high cutting loads.

MBS140's Cutting Performance



<Cutting Conditions>
 Workpiece : FC250 (220—250HB)
 Insert : SNGN090308
 Cutting Speed : 500m/min
 Feed : 0.25mm/rev
 Depth of Cut : 0.1mm
 Dry Cutting

Stable flank wear is maintained compared to conventional products for continuous cutting.



<Cutting Conditions>
 Workpiece : FC250
 Insert : CNGA120408
 Cutting Speed : 800m/min
 Feed : 0.3mm/rev
 Depth of Cut : 0.5mm
 Dry Cutting

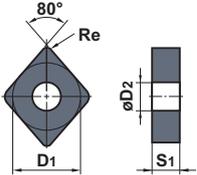
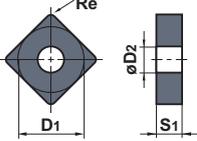
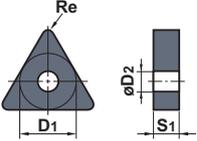


Provides outstanding wear resistance and fracture resistance, MBS140 achieves long tool life without abnormal fracturing even when deep cutting

MBS140

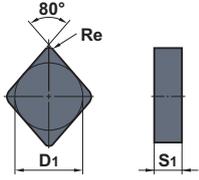
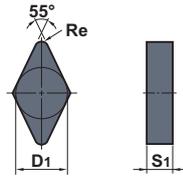
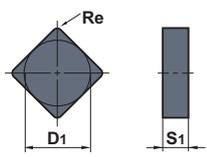
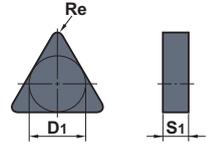
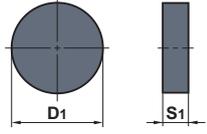
INSERTS

● Standard Inserts (With hole)

Shape	Order Number	Stock		Dimensions (mm)				Geometry
		<i>MBS140</i>		D1	S1	Re	D2	
 	CNGA120408	●	4	12.7	4.76	0.8	5.16	
	120412	●	4	12.7	4.76	1.2	5.16	
 	SNGA120408	●	8	12.7	4.76	0.8	5.16	
	120412	●	8	12.7	4.76	1.2	5.16	
 	TNGA160408	●	6	9.525	4.76	0.8	3.81	
	160412	●	6	9.525	4.76	1.2	3.81	

* Please use with double clamp holder and lever lock holders.

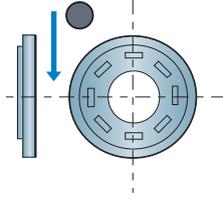
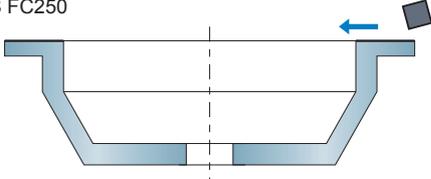
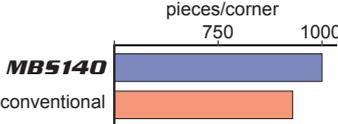
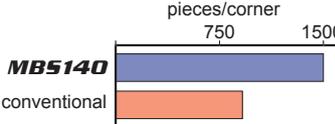
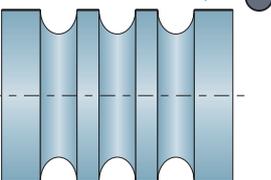
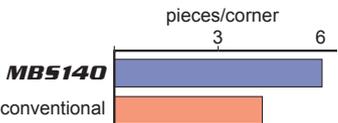
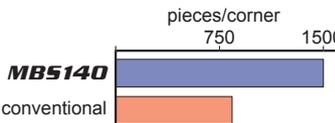
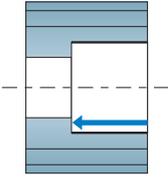
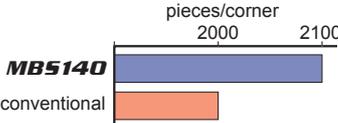
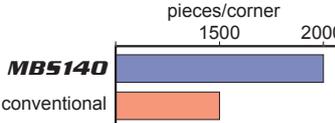
● Standard Inserts

Shape	Order Number	Stock		Dimensions (mm)			Geometry
		<i>MBS140</i>		D1	S1	Re	
	CNGN120404	●	4	12.7	4.76	0.4	
	120408	●	4	12.7	4.76	0.8	
	120412	●	4	12.7	4.76	1.2	
	DNGN110308	●	4	9.525	3.18	0.8	
	110312	●	4	9.525	3.18	1.2	
	SNGN090308	●	8	9.525	3.18	0.8	
	090312	●	8	9.525	3.18	1.2	
	090316	●	8	9.525	3.18	1.6	
	090408	●	8	9.525	4.76	0.8	
	090412	●	8	9.525	4.76	1.2	
	120408	●	8	12.7	4.76	0.8	
	120412	●	8	12.7	4.76	1.2	
	120416	●	8	12.7	4.76	1.6	
	TNGN160408	●	6	9.525	4.76	0.8	
	160412	●	6	9.525	4.76	1.2	
	160416	●	6	9.525	4.76	1.6	
	RNGN090300	●	—	9.525	3.18	—	
	120300	●	—	12.7	3.18	—	
	120400	●	—	12.7	4.76	—	

Recommended Cutting Conditions

Workpiece	Cutting Mode	Cutting Speed (m/min)					Feed (mm/rev)	Depth of Cut (mm)	Coolant
		250	500	750	1000	1250			
Cast iron	Turning						-1.0	-5.0	Dry, Wet
	Milling						-0.15	-5.0	Dry
Workpiece	Cutting Mode	Cutting Speed (m/min)					Feed (mm/rev)	Depth of Cut (mm)	Coolant
		100	150	200	250	300			
General sintered alloy	Turning (Rough)						-0.2	-5.0	Dry, Wet
Workpiece	Cutting Mode	Cutting Speed (m/min)					Feed (mm/rev)	Depth of Cut (mm)	Coolant
		10	20	30	60	100			
High-speed steel	Turning						-0.4	-3.0	Dry, Wet
Cemented carbide	Turning						-0.2	-5.0	Dry, Wet

Application Examples

Insert		RNGN120300	SNGN120412
Work piece	JIS FC250		
	Clutch parts	Brake drum	
Cutting Conditions	Cutting Speed (m/min)	500	700
	Feed (mm/rev)	0.3	0.3
	Depth of Cut (mm)	3.5	3
Coolant		Dry cutting	Dry cutting
Results	 <p>Conventional solid CBN tool life was 900 parts due to large wear. MBS140 could extend the tool life to 1000 parts.</p>	 <p>Conventional solid CBN tool life was 850 parts due to large wear. MBS140 could extend the tool life to 1500 parts.</p>	
	<p>pieces/corner</p> <p>750 1000</p> <p>MBS140</p> <p>conventional</p>		<p>pieces/corner</p> <p>750 1500</p> <p>MBS140</p> <p>conventional</p>
Insert		RNGN120400	SNGN120416
Work piece	Cemented carbide		JIS FC250
	Cemented carbide roll	Brake disc	
Cutting Conditions	Cutting Speed (m/min)	15	700
	Feed (mm/rev)	0.14	0.3
	Depth of Cut (mm)	0.1	3
Coolant		Dry cutting	Dry cutting
Results	 <p>Longer tool life than a conventional single-sided CBN insert. The economical double-sided MBS140 insert reduced tool costs.</p>	 <p>Conventional solid CBN had a tool life of 800 parts. MBS140 could lengthen the tool life to 1500 parts.</p>	
	<p>pieces/corner</p> <p>3 6</p> <p>MBS140</p> <p>conventional</p>	<p>pieces/corner</p> <p>750 1500</p> <p>MBS140</p> <p>conventional</p>	
Insert		CNGA432	CNGA433
Work piece	HRC55		HRC55
	Transmission gear	Drive rotor	
Cutting Conditions	Cutting Speed (m/min)	183	101
	Feed (mm/rev)	0.356	0.356
	Depth of Cut (mm)	5.994	5.994
Coolant		Dry cutting	Dry cutting
Results	 <p>Due to excellent flank wear, number of work pieces per cutting edge increased.</p>	 <p>Increase of cutting speed enabled efficient cutting.</p>	
	<p>pieces/corner</p> <p>2000 2100</p> <p>MBS140</p> <p>conventional</p>	<p>pieces/corner</p> <p>1500 2000</p> <p>MBS140</p> <p>conventional</p>	



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MBS140

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

MITSUBISHI MATERIALS CORPORATION

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(Tools specifications subject to change without notice.)

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