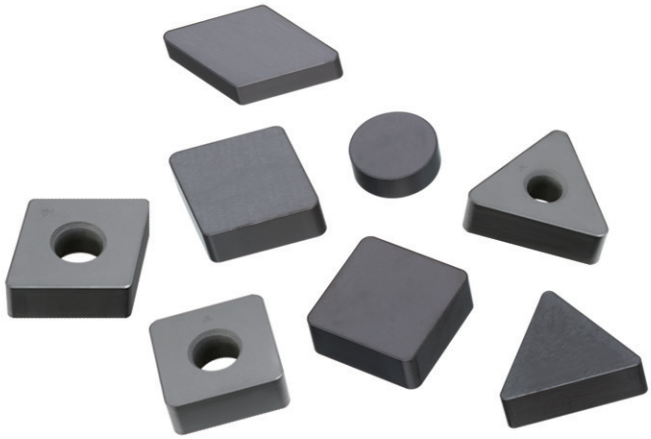
MITSUBISHI MATERIALS

MBS140

SOLID CBN GRADE FOR CAST IRON AND SINTERED ALLOY



TOOL NEWS **B076A**

Solid CBN Grade for Cast Iron and Sintered Alloy

MBS140

100% Solid CBN structure

For highly efficient machining at large depths of cut

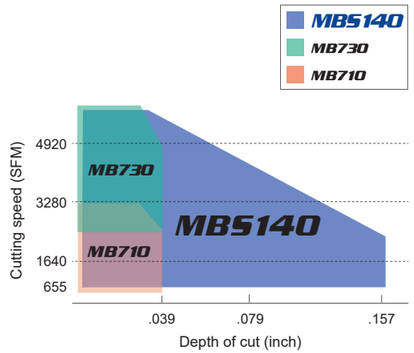
Inserts made entirely of CBN do not limit the depth of cut. For the high speed and efficiency of CBN finishing but now also for roughing applications.

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.

Application range

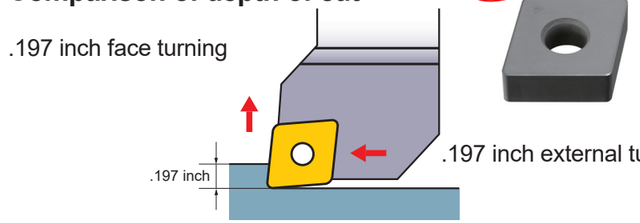
for higher efficiency machining

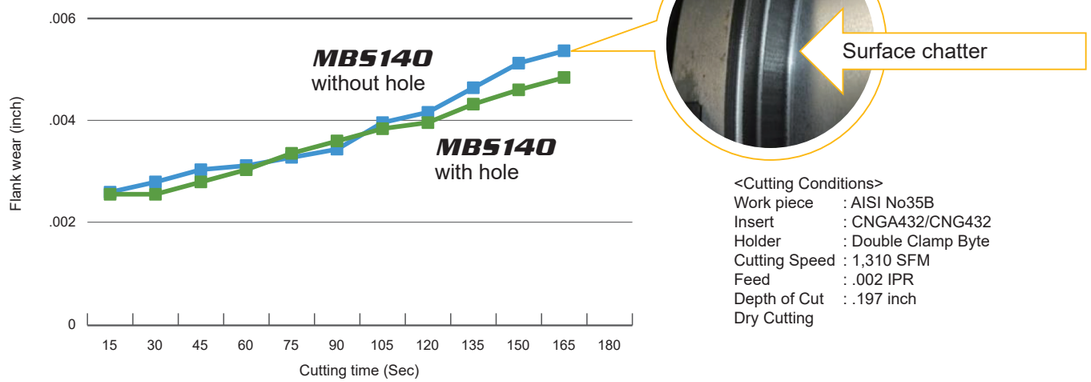


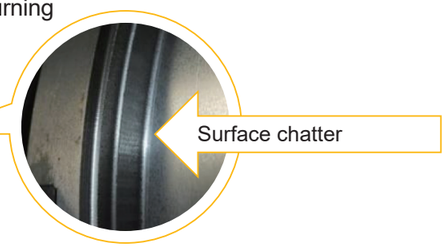
Addition of insert series with hole

Comparison of depth of cut

NEW



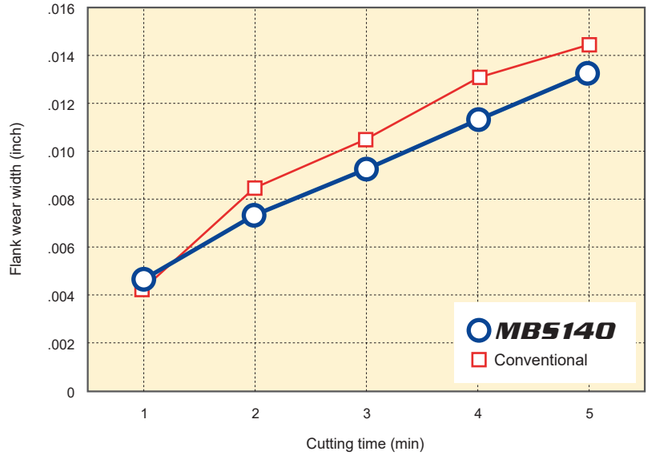




<Cutting Conditions>
Work piece : AISI No35B
Insert : CNGA432/CNGA432
Holder : Double Clamp Byte
Cutting Speed : 1,310 SFM
Feed : .002 IPR
Depth of Cut : .197 inch
Dry Cutting

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

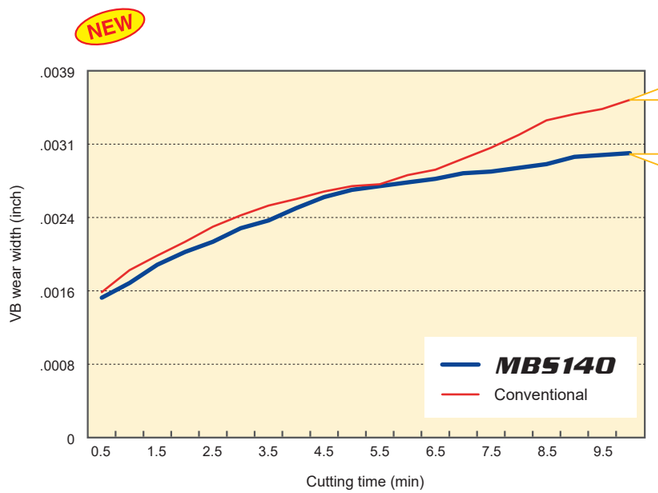
MBS140's Cutting Performance

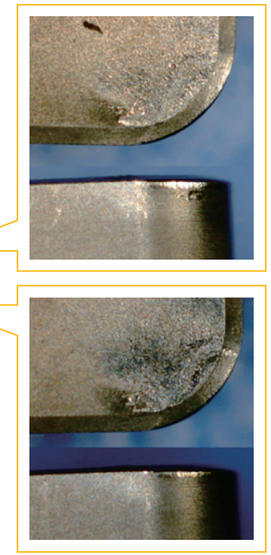


<Cutting Conditions>
Work piece : AISI No35B (220–250HB)
Insert : SNG322
Cutting Speed : 1,640 SFM
Feed : .010 IPR
Depth of Cut : .004 inch
Dry Cutting

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

NEW





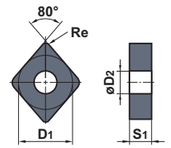
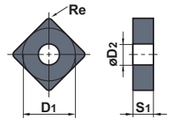
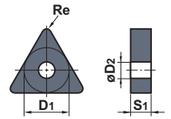
<Cutting Conditions>
Work piece : AISI No35B
Insert : CNGA432
Cutting Speed : 2,625 SFM
Feed : .012 IPR
Depth of Cut : .020 inch
Dry Cutting

Provides outstanding wear resistance and fracture resistance,
MBS140 achieves long tool life without abnormal fracturing even when taking large depth of cut.

MBS140

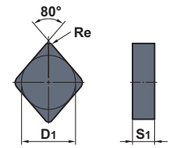
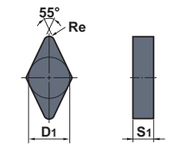
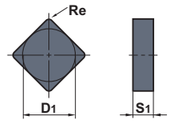
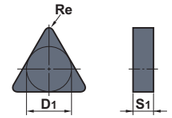
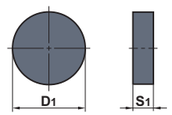
INSERTS

● Standard Inserts (With hole)

Shape	Order Number	(ISO) Number	Stock MBS140	No.of Corners	Dimensions (inch) D1	S1	Re	D2	Geometry
NEW 	**CNGA432**	**CNGA120408**	●	4	.500	.187	.031	.203	
	CNGA**433**	CNGA**120412**	●	4	.500	.187	.047	.203	
NEW 	**SNGA432**	**SNGA120408**	●	8	.500	.187	.031	.203	
	SNGA**433**	SNGA**120412**	●	8	.500	.187	.047	.203	
NEW 	**TNGA332**	**TNGA160408**	●	6	.375	.187	.031	.150	
	TNGA**333**	TNGA**160412**	●	6	.375	.187	.047	.150	

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

● Standard Inserts

Shape	Order Number	(ISO) Number	Stock MBS140	No.of Corners	Dimensions (mm) D1	S1	Re	Geometry
	**CNG431**	**CNGN120404**	★	4	.500	.187	.016	
	CNG**432**	CNGN**120408**	●	4	.500	.187	.031	
	CNG**433**	CNGN**120412**	●	4	.500	.187	.047	
	**DNG322**	**DNGN110308**	★	4	.375	.125	.031	
	DNG**323**	DNGN**110312**	★	4	.375	.125	.047	
	**SNG322**	**SNGN090308**	●	8	.375	.125	.031	
	SNG**323**	SNGN**090312**	●	8	.375	.125	.047	
	SNG**324**	SNGN**090316**	●	8	.375	.125	.063	
	SNG**332**	SNGN**090408**	●	8	.375	.187	.031	
	SNG**333**	SNGN**090412**	●	8	.375	.187	.047	
	SNG**432**	SNGN**120408**	●	8	.500	.187	.031	
	SNG**433**	SNGN**120412**	★	8	.500	.187	.047	
	SNG**434**	SNGN**120416**	●	8	.500	.187	.063	
	**TNG332**	**TNGN160408**	●	6	.375	.187	.031	
	TNG**333**	TNGN**160412**	●	6	.375	.187	.047	
	TNG**334**	TNGN**160416**	●	6	.375	.187	.063	
	**RNG32**	**RNGN090300**	●	—	.375	.125	—	
	RNG**42**	RNGN**120300**	●	—	.500	.125	—	
	RNG**43**	RNGN**120400**	●	—	.500	.187	—	

● : Inventory maintained. ★ : Inventory maintained in Japan.

SOLID CBN GRADE FOR CAST IRON AND SINTERED ALLOY

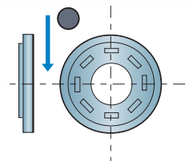
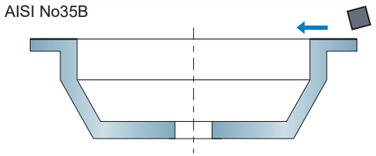
Recommended Cutting Conditions

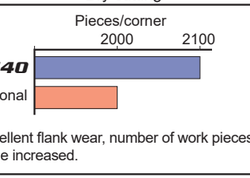
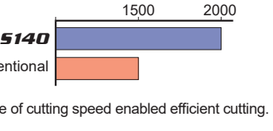
Work piece	Cutting Mode	Cutting Speed (SFM) 820 1640 2460 3280 4100	Feed (IPR)	Depth of Cut (inch)	Coolant
Cast iron	Turning		≤.039	≤.197	Dry, Wet
	Milling		≤.006	≤.197	Dry

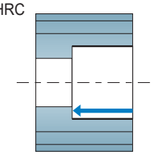
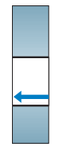
Work piece	Cutting Mode	Cutting Speed (SFM) 330 490 655 820 985	Feed (IPR)	Depth of Cut (inch)	Coolant
General sintered alloy	Turning (Rough)		≤.008	≤.197	Dry, Wet

Work piece	Cutting Mode	Cutting Speed (SFM) 30 65 100 195 330	Feed (IPR)	Depth of Cut (inch)	Coolant
High-speed steel	Turning		≤.016	≤.118	Dry, Wet
Cemented carbide	Turning		≤.008	≤.197	Dry, Wet

Application Examples

	Insert	RNG42	SNG433
	Work piece	AISI No35B 	AISI No35B 
	Component	Clutch parts	Brake drum
Cutting Conditions	Cutting Speed (SFM)	1640	2300
	Feed (IPR)	.012	.012
	Depth of Cut (inch)	.138	.118
	Coolant	Dry cutting	Dry cutting
	Results	Pieces/corner 750 1000 MBS140 Conventional	Pieces/corner 750 1500 MBS140 Conventional
		Conventional solid CBN tool life was 900 parts due to large wear. MBS140 could extend the tool life to 1000 parts.	Conventional solid CBN tool life was 850 parts due to large wear. MBS140 could extend the tool life to 1500 parts.

	Insert	RNG43	SNG434
	Work piece	Cemented carbide 	AISI No35B 
	Component	Cemented carbide roll	Brake disc
Cutting Conditions	Cutting Speed (SFM)	50	2300
	Feed (IPR)	.006	.012
	Depth of Cut (inch)	.004	.118
	Coolant	Dry cutting	Dry cutting
	Results	Pieces/corner 3 6 MBS140 Conventional	Pieces/corner 750 1500 MBS140 Conventional
		Longer tool life than a conventional single-sided CBN insert. The economical double-sided MBS140 insert reduced tool costs.	Conventional solid CBN had a tool life of 800 parts. MBS140 could lengthen the tool life to 1500 parts.

	Insert	CNGA432	CNGA433
	Work piece	Sintered Alloy 55HRC NEW 	Sintered Alloy 55HRC NEW 
	Component	Transmission gear	Drive rotor
Cutting Conditions	Cutting Speed (SFM)	600	330
	Feed (IPR)	.014	.014
	Depth of Cut (inch)	.236	.236
	Coolant	Dry cutting	Dry cutting
	Results	Pieces/corner 2000 2100 MBS140 Conventional	Pieces/corner 1500 2000 MBS140 Conventional
		Due to excellent flank wear, number of work pieces per cutting edge increased.	Increase of cutting speed enabled efficient cutting.

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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.

www.mmc-carbide.com/us

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