MBS140

SOLID PCBN GRADE FOR MACHINING CAST IRON AND SINTERED ALLOY

DIAEDGE

MITSUBISHI MATERIALS

MBS140

SOLID PCBN FOR HIGH PRODUCTIVITY

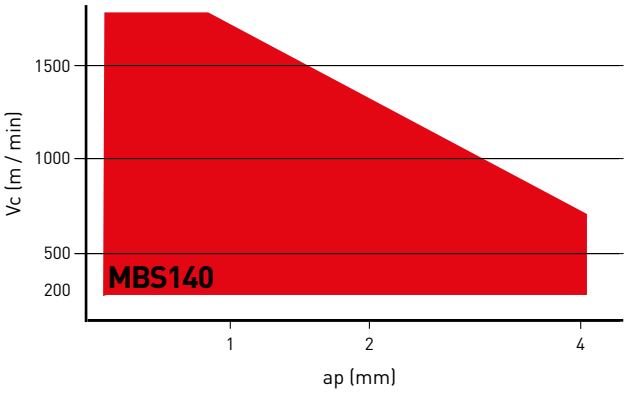
SOLID PCBN FOR IMPROVED MACHINING OF CAST IRON AT HIGH-SPEEDS AT LARGE DEPTHS OF CUT

FOR HIGHLY EFFICIENT MACHINING AT LARGE DEPTHS OF CUT

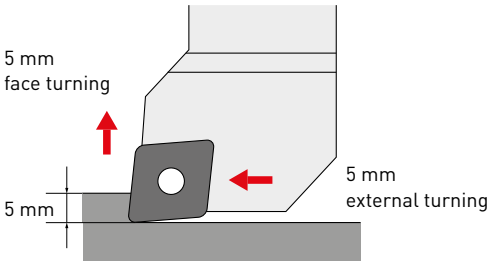
Inserts made entirely of PCBN do not limit the depth of cut. Originally designed for high speed and efficient finishing, but are now also capable of roughing applications.

BALANCE OF WEAR AND FRACTURE RESISTANCE

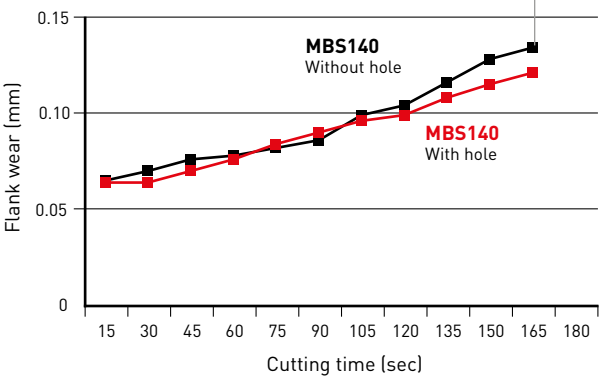
The use of PCBN particles and a special binder delivers high wear resistance. Mitsubishi's unique high-performance sintering technology also provides excellent fracture resistance.



SOLID PCBN INSERTS WITH HOLE



Insert	CNGA120408/CNGN120408
Workpiece material	FC250 (DIN GG25)
Holder	Double Clamp Type
Cutting mode	Dry cutting
Vc (m/min)	400
f (mm/rev)	0.05
ap (mm)	5.0

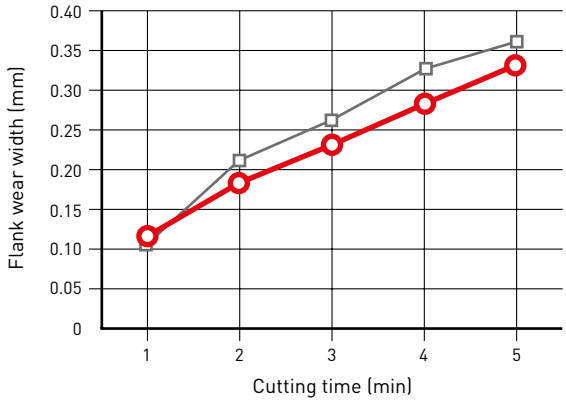


Vibration occurred when using an insert without hole after 165 sec due to high cutting loads.

MBS140

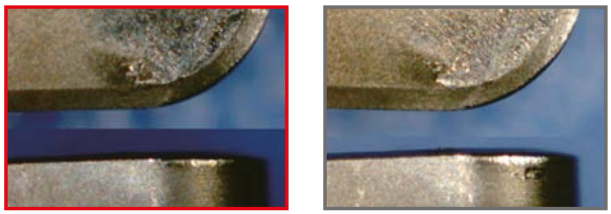
CUTTING PERFORMANCE

Insert	SNGN090308
Workpiece material	FC250 (220 – 250HB)
Cutting mode	Dry cutting
Vc (m/min)	500
f (mm/rev)	0.25
ap (mm)	0.1

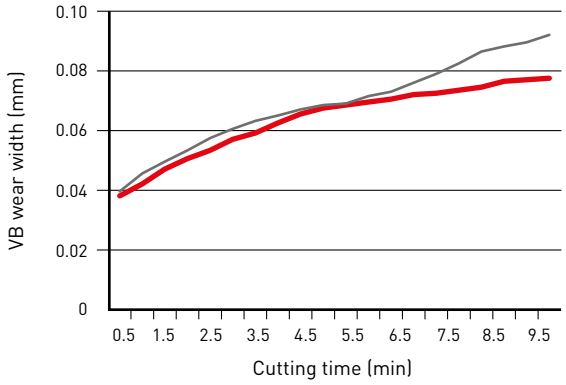


Stable flank wear is maintained compared to conventional products. Ideal for continuous cutting.

Insert	CNGA120408
Workpiece material	FC250
Cutting mode	Dry cutting
Vc (m/min)	800
f (mm/rev)	0.3
ap (mm)	0.5



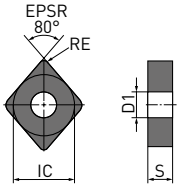
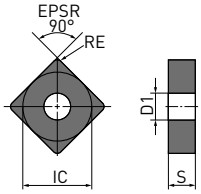
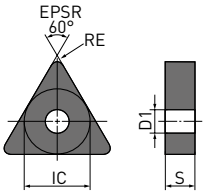
MBS140 Conventional



Gives both outstanding wear and fracture resistance, thereby enabling MBS140 to achieve a long tool life without abnormal fracturing even at large depths of cut.

MBS140

INSERTS (WITH HOLE)

Order number	MBS140	ZEFP	IC	S	RE	D1	Geometry
CNGA120408	★	4	12.7	4.76	0.8	5.16	 
CNGA120412	★	4	12.7	4.76	1.2	5.16	
SNGA120408	★	8	12.7	4.76	0.8	5.16	 
SNGA120412	★	8	12.7	4.76	1.2	5.16	
TNGA160408	★	6	9.525	4.76	0.8	3.81	 
TNGA160412	★	6	9.525	4.76	1.2	3.81	

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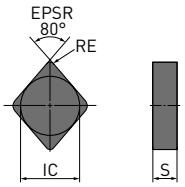
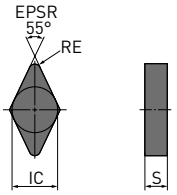
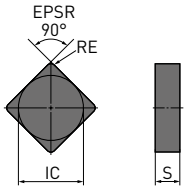
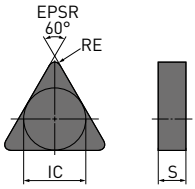
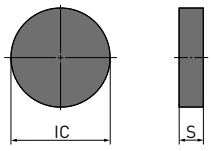
6 Vc

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

MBS140

INSERTS

Order number	MBS140	ZEFP	IC	S	RE	Geometry
CNGN120404	●	4	12.7	4.76	0.4	 
CNGN120408	●	4	12.7	4.76	0.8	
CNGN120412	●	4	12.7	4.76	1.2	
DNGN110308	★	4	9.525	3.18	0.8	 
DNGN110312	★	4	9.525	3.18	1.2	
SNGN090308	●	8	9.525	3.18	0.8	 
SNGN090312	●	8	9.525	3.18	1.2	
SNGN090316	●	8	9.525	3.18	1.6	
SNGN090408	★	8	9.525	4.76	0.8	
SNGN090412	★	8	9.525	4.76	1.2	
SNGN120408	●	8	12.7	4.76	0.8	
SNGN120412	●	8	12.7	4.76	1.2	
SNGN120416	●	8	12.7	4.76	1.6	
TNGN160408	●	6	9.525	4.76	0.8	 
TNGN160412	●	6	9.525	4.76	1.2	
TNGN160416	●	6	9.525	4.76	1.6	
RNGN090300	●	—	9.525	3.18	—	 
RNGN120300	●	—	12.7	3.18	—	
RNGN120400	●	—	12.7	4.76	—	

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MBS140

RECOMMENDED CUTTING CONDITIONS

	Material	Cutter type	Vc	f	ap	Cutting mode
K	Cast iron	Turning	300 – 800	– 0.1	– 5.0	Dry, Wet
		Milling	500 – 1100	– 0.15	– 5.0	Dry
	Sintered alloy	Turning (Rough)	100 – 250	– 0.2	– 5.0	Dry, Wet
	High speed steel	Turning	20 – 60	– 0.4	– 3.0	Dry, Wet
	Cemented carbide	Turning	10 – 25	– 0.2	– 5.0	Dry, Wet

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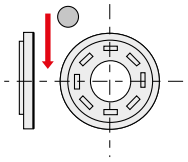
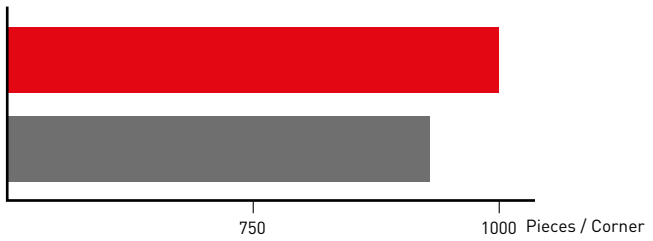
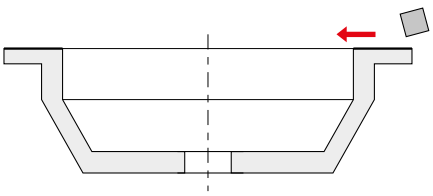
APPLICATION EXAMPLES

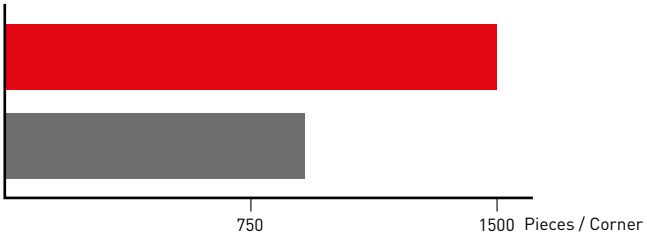
Insert	RNGN120300
Workpiece material	JIS FC250
Cutting mode	Dry cutting
Vc (m/min)	500
f (mm/rev)	0.3
ap (mm)	3.5
Component	Clutch parts
Result	The tool life of a coventional solid PCBN insert was stopped at 900 parts due to large wear. MBS140 could extend the tool life to 1000 parts.





Insert	SNGN120412
Workpiece material	JIS FC250
Cutting mode	Dry cutting
Vc (m/min)	700
f (mm/rev)	0.3
ap (mm)	3
Component	Brake drum
Result	A competitor's solid PCBN insert could not machine more than 850 parts due to large wear. MBS140 extended the tool life to 1500 parts.

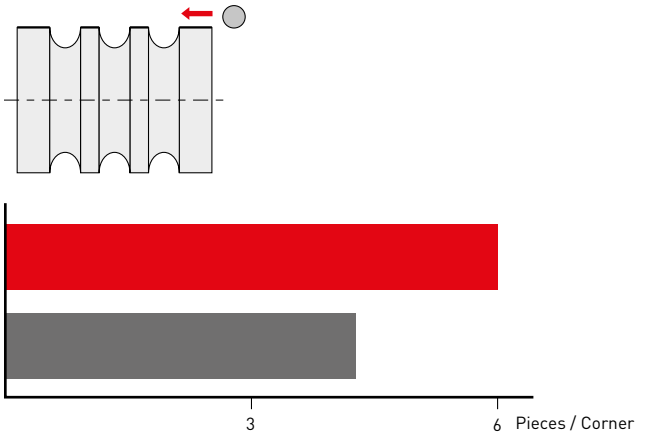




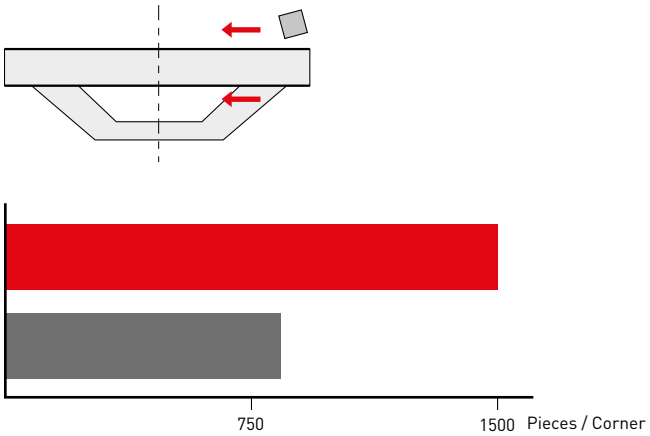
: MBS140 : Conventional tool

MBS140 – APPLICATION EXAMPLES

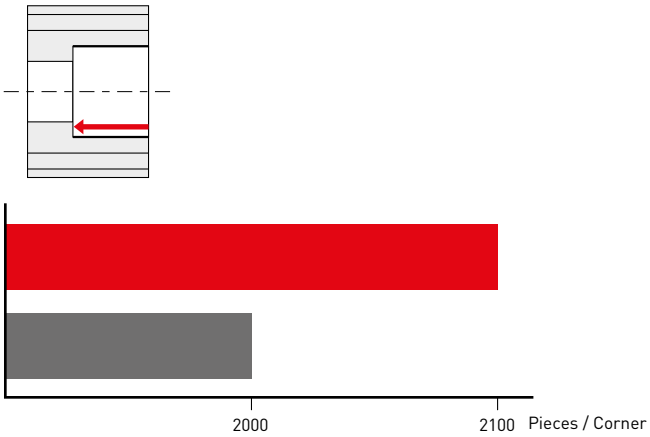
Insert	RNGN120400
Workpiece material	Cemented carbide
Cutting mode	Dry cutting
Vc (m/min)	15
f (mm/rev)	0.14
ap (mm)	0.1
Component	Cemented carbide roll
Result	Longer tool life than a competitor's single-sided PCBN insert. The economical double-sided MBS140 insert reduced tool costs.



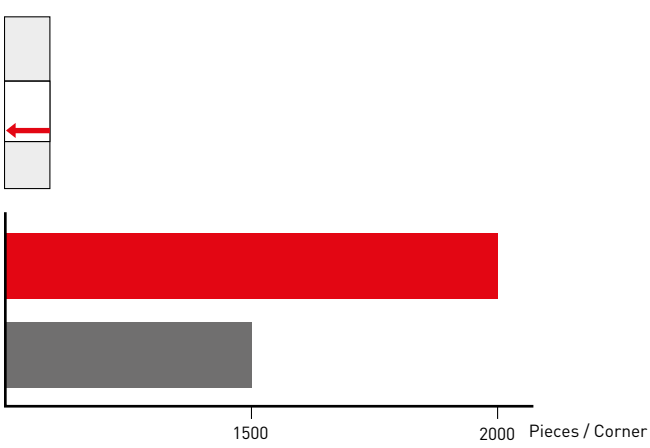
Insert	SNGN120416
Workpiece material	JIS FC250
Cutting mode	Dry cutting
Vc (m/min)	700
f (mm/rev)	0.3
ap (mm)	3
Component	Brake disc
Result	A competitor's solid PCBN tool was worn after machining 800 parts. MBS140 could lengthen the tool life to 1500 parts.



Insert	CNGN120404
Workpiece material	HRC55
Cutting mode	Dry cutting
Vc (m/min)	183
f (mm/rev)	0.356
ap (mm)	5.994
Component	Transmission gear
Result	Due to excellent flank wear resistance, the number of work pieces per cutting edge increased.



Insert	CNGN120404
Workpiece material	HRC55
Cutting mode	Dry cutting
Vc (m/min)	101
f (mm/rev)	0.356
ap (mm)	5.994
Component	Drive rotor
Result	Increased cutting speed enabled highly efficient cutting.



■ : MBS140 ■ : Conventional tool

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Published: 2023.11