



New

VISION Series

General Inserts for turning

VM Breaker

Features

- VM chip breaker ensures stable cutting performance even in high feed and deep depth of cut.
- Specially designed 3-dimensional chip breaker having low cutting resistance and improved rigidity of cutting.
- The best cutting performance is accomplished due to improved chip control on various workpiece under the continuous machining of high speed.



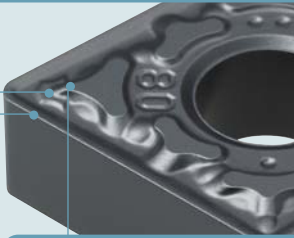


VM Breaker

Features of VM C/B | Recommended Cutting Conditions

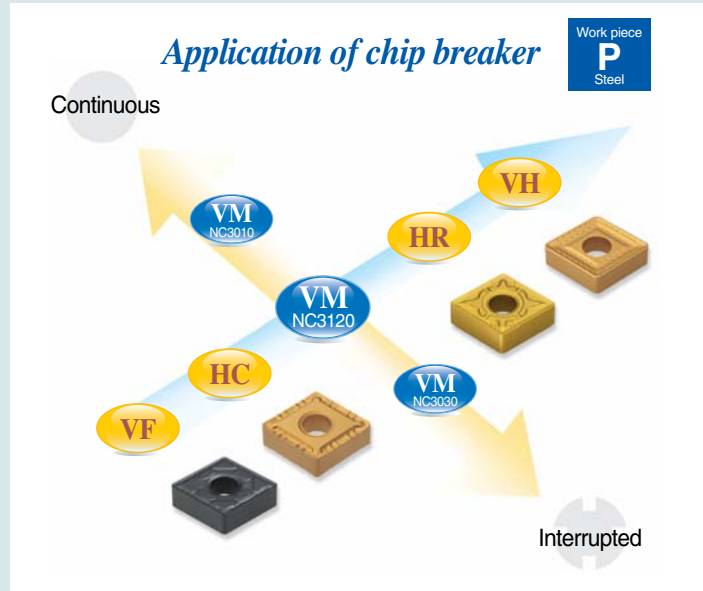
Features of VM C/B

- The “convex part” for smooth chip breaking
- Excellent chip control in medium to roughing operations

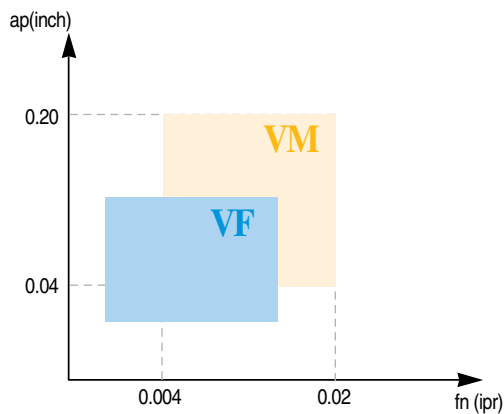


- Chip breaker with 2-step geometry
- Reduce chip control resistance at high speed & feed cutting due to smooth chip curling

- Rigid cutting edge
- Improved the rigidity of cutting edge and increased toughness guarantees long tool life under the heavy intermittent cutting

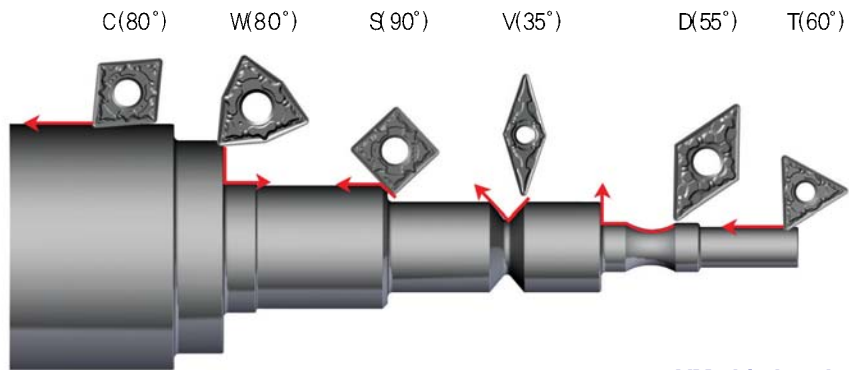


Chip Control Range



Recommended Cutting Conditions

Workpiece	Hardness	Grade	vc (sfm)
Soft Steels (1010~1025 5115, 4115 etc.)	≤180HB	NC3010	1020(890~1160)
		NC3120	960(830~1090)
		NC3030	890(760~990)
General Steels (1045, 1055, 4140 etc.)	180~260HB	NC3010	730(590~830)
		NC3120	660(560~760)
		NC3030	630(530~690)
Hardened Steels (3115, 3130, 8637 4340 etc.)	260~350HB	NC3010	430(330~500)
		NC3120	400(300~460)
		NC3030	360(260~430)



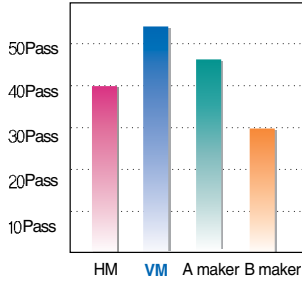
VM chip breaker tooling system



VM Breaker

Wear resistance | Shock resistance | Application examples

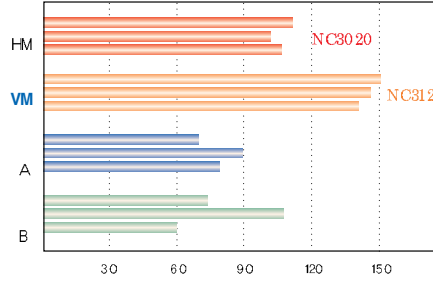
Wear resistance



Cutting Conditions

Designation : CNMG432-VM
 Grade : NC3120
 Workpiece : 4140
 vc = 825 sfm
 ap = 0.08 inch
 fn = 0.01 ~ 0.014 ipr




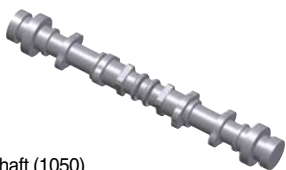

Shock resistance



Cutting Conditions

Designation : CNMG432-VM
 Grade : NC3120
 Workpiece : 4140(Interrupted)
 vc = 600 sfm
 ap = 0.08 inch
 fn = 0.02 ipr

Application examples

Workpiece	Korloy		Competitor
 Hub (1045)	Designation	CNMG432-VM (NC3010)	CNMG432-O
	vc (sfm)	825	←
	fn (ipr)	0.014 ~ 0.016	←
	ap (inch)	0.06	←
	Machined part	Outer & Face	←
Result	120ea	100ea	
 Hub Wheel (1045)	Designation	CNMG433-VM (NC3120)	CNMG433-O
	vc (sfm)	1000	←
	fn (ipr)	0.01	←
	ap (inch)	0.1	←
	Machined part	Outer & Face	←
Result	25ea	20ea	
 Ring (4140)	Designation	CNMG432-VM (NC3120)	CNMG432-O
	vc (sfm)	792	←
	fn (ipr)	0.008	←
	ap (inch)	0.08	←
	Machined part	Outer & Face	←
Result	200ea	100ea	
 Cam Shaft (1050)	Designation	DNMG442-VM (NC3120)	DNMG442-O
	vc (sfm)	518	←
	fn (ipr)	0.006 ~ 0.016	←
	ap (inch)	0.04 ~ 0.06	←
	Machined part	Outer & Face	←
Result	150ea	120ea	
 Pin Gear (4130)	Designation	TNMG332-VM (NC3120)	TNMG332-O
	vc (sfm)	1100	←
	fn (ipr)	0.01	←
	ap (inch)	0.08	←
	Machined part	Outer & Face	←
Result	180ea	150ea	



VM Breaker

VM-Insert

VM-Insert

Geometry	Designation	CVD					PVD		CERMET
		NC3010	NC3120	NC3030	NC6110	NC9020	PC8010	PC9030	CN2000
	CNMG321-VM	●	○	○					●
	CNMG322-VM	●	○	○					●
	CNMG431-VM	●	●	●	●			●	●
	CNMG432-VM	●	●	●	●	●	●	●	●
	CNMG433-VM	●	●	●	●		●		●
	CNMG542-VM	●	○	○					
	CNMG543-VM		○	○					
	CNMG642-VM	●	○	○					
	CNMG643-VM	●	○	○					
	DNMG331-VM								●
	DNMG332-VM	○	○						●
	DNMG333-VM	○	○						
	DNMG431-VM	○	●	●	●	○			●
	DNMG432-VM	○	●	●	●	○			●
	DNMG433-VM								●
	DNMG441-VM	○	●	●		○		●	●
	DNMG442-VM	●	●	●		●		●	●
	DNMG443-VM					○			●
	SNMG321-VM	○	○						●
	SNMG322-VM	○	○	●					●
	SNMG431-VM	○	○	●	○				●
	SNMG432-VM	●	●	●	●	●	●	●	●
	SNMG433-VM	○	○	○	○				●
	SNMG643-VM		○	○					
	TNMG222-VM				○	○			
	TNMG331-VM	●	●	●	●	○			●
	TNMG332-VM	●	●		●			●	●
	TNMG333-VM		●	●		○			●
	TNMG431-VM		○			○			
	TNMG432-VM		○						
	TNMG433-VM		○						
	VNMG331-VM	●	○						●
	VNMG332-VM	●	●	●	●			●	●
	VNMG333-VM								
	VNMG431-VM								
	VNMG432-VM								
	WNMG331-VM		○						●
	WNMG332-VM	○	○		○				●
	WNMG333-VM		○						
	WNMG431-VM	○	○						●
	WNMG432-VM	●	●	●	●	●	●	●	●
	WNMG433-VM		●	●	●				●

● Stock item, ○ Under preparing for stock

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