

## VISION Series

General Inserts for turning

# VM Breaker

**New**

### 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.

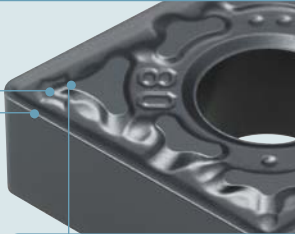


# VM Breaker

Features of VM C/B | Recommended Cutting Conditions

## Features of VM C/B

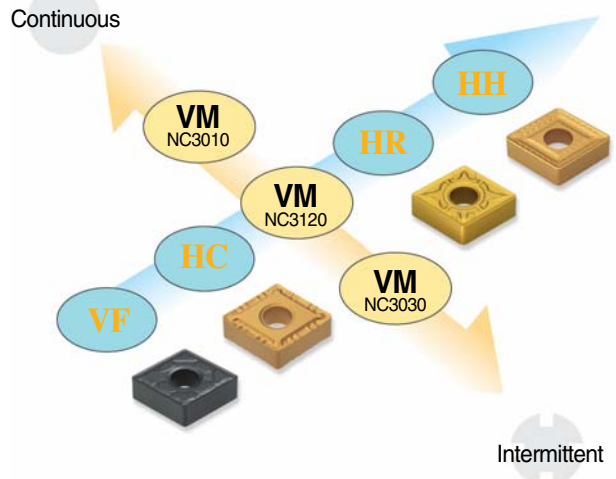
- The “convex part” for smooth chip breaking
- Excellent chip control in medium to roughing operations



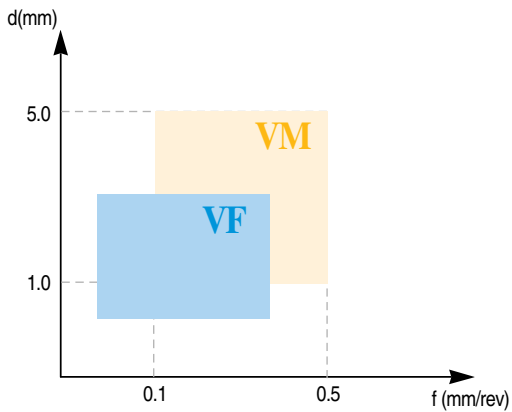
- Chip breaker with 2-step geometry
- Reduce chip control resistance at high speed & feed cutting due to smooth chip curling

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

## Application of chip breaker

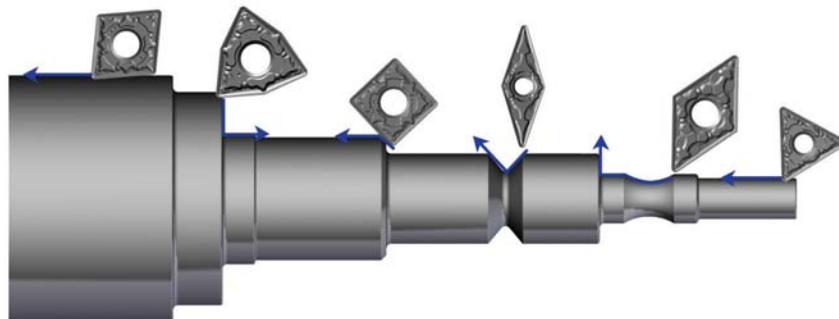


## Chip Control Range



## Recommended Cutting Conditions

Workpiece	Hardness	Grade	V (m/min) (sfm)
Soft Steels (SM10C-SM25C SS400, SCR415 SCM415. etc)	≤ 180Hb	NC3010	310 (270~350) 1020 (890~1160)
		NC3120	290 (250~330) 960 (830~1090)
		NC3030	270 (230~300) 890 (760~990)
General Steels (S45C, S55C, SCM430, SCM440. etc)	180~260Hb	NC3010	220 (180~250) 730 (590~830)
		NC3120	200 (170~230) 660 (560~760)
		NC3030	190 (160~210) 630 (530~690)
Hardened Steels (SNC415, SNC815, SNCM240, SNCM439, STS12, STS61. etc)	260~350Hb	NC3010	130 (100~150) 430 (330~500)
		NC3120	120 (90~140) 400 (300~460)
		NC3030	110 (80~130) 360 (260~430)



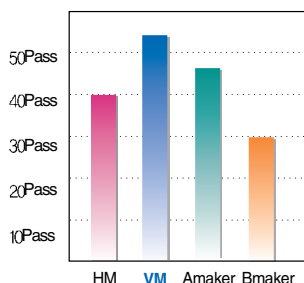
VM chip breaker tooling system



# VM Breaker

Wear resistance | Shock resistance | Application Examples

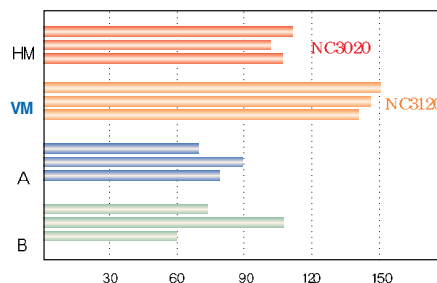
## Wear resistance



### Cutting Conditions

Designation : CNMG120408-VM  
Grade : NC3120  
Workpiece : SCM440  
V=250m/min  
d=2.0mm  
f=0.25~0.35mm/rev


## Shock resistance





### Cutting Conditions

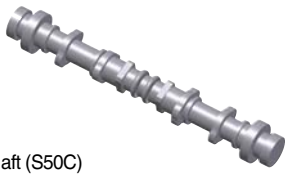
Designation : CNMG120408-VM  
Grade : NC3120  
Workpiece : SCM440(Intermittent)  
V=200 m/min  
d=2.0mm  
f=0.45mm/rev


## Application Examples

Workpiece	Korloy	Competitor	
 Hub (S45C)	<b>Designation</b>	CNMG120408-VM (NC3010)	CNMG120408-O
	<b>V (m/min)</b>	250	←
	<b>f (mm/rev)</b>	0.35 ~ 0.4	←
	<b>d (mm)</b>	1.5	←
	<b>Machined part</b>	Outer & Face	←
<b>Result</b>	120ea	100ea	

Workpiece	Korloy	Competitor	
 Hub Wheel (S45C)	<b>Designation</b>	CNMG120412-VM (NC3120)	CNMG120412-O
	<b>V (m/min)</b>	300	←
	<b>f (mm/rev)</b>	0.25	←
	<b>d (mm)</b>	2.5	←
	<b>Machined part</b>	Outer & Face	←
<b>Result</b>	25ea	20ea	

Workpiece	Korloy	Competitor	
 Ring (SCM440)	<b>Designation</b>	CNMG120408-VM (NC3120)	CNMG120408-O
	<b>V (m/min)</b>	240	←
	<b>f (mm/rev)</b>	0.2	←
	<b>d (mm)</b>	2.0	←
	<b>Machined part</b>	Outer & Face	←
<b>Result</b>	200ea	100ea	

Workpiece	Korloy	Competitor	
 Cam Shaft (S50C)	<b>Designation</b>	DNMG15068-VM (NC3120)	DNMG15068-O
	<b>V (m/min)</b>	157	←
	<b>f (mm/rev)</b>	0.15 ~ 0.4	←
	<b>d (mm)</b>	1.0 ~ 1.5	←
	<b>Machined part</b>	Outer & Face	←
<b>Result</b>	150ea	120ea	

Workpiece	Korloy	Competitor	
 Pin Gear (SCM415)	<b>Designation</b>	TNMG160408-VM (NC3120)	TNMG160408-O
	<b>V (m/min)</b>	336	←
	<b>f (mm/rev)</b>	0.25	←
	<b>d (mm)</b>	2.0	←
	<b>Machined part</b>	Outer & Face	←
<b>Result</b>	180ea	150ea	



## VM-Insert

Geometry	Designation	Coated				Cermet CN2000	Dimensions(mm)			
		NC3010	NC3120	NC3030	PC9030		d	t	r	d <sub>1</sub>
	CNMG090304-VM	●	●	●	○	○	9.525	3.18	0.4	3.81
	CNMG090308-VM	●	●	●	○	○	9.525	3.18	0.8	3.81
	CNMG120404-VM	●	●	●	○	○	12.70	4.76	0.4	5.16
	CNMG120408-VM	●	●	●	○	○	12.70	4.76	0.8	5.16
	CNMG120412-VM	●	●	●	○	○	12.70	4.76	1.2	5.16
	CNMG160608-VM	●	●	●	○	○	15.875	6.35	0.8	6.35
	CNMG160612-VM	●	●	●	○	○	15.875	6.35	1.2	6.35
	CNMG190612-VM	●	●	●	○	○	19.05	6.35	1.2	7.93
	DNMG110404-VM	●	●	●	○	○	9.525	4.76	0.4	3.81
	DNMG110408-VM	●	●	●	○	○	9.525	4.76	0.8	3.81
	DNMG110412-VM	●	●	●	○	○	9.525	4.76	1.2	3.81
	DNMG150404-VM	●	●	●	○	○	12.7	4.76	0.4	5.16
	DNMG150408-VM	●	●	●	○	○	12.7	4.76	0.8	5.16
	DNMG150412-VM	●	●	●	○	○	12.7	4.76	1.2	5.16
	DNMG150604-VM	●	●	●	○	○	12.7	6.35	0.4	5.16
	DNMG150608-VM	●	●	●	○	○	12.7	6.35	0.8	5.16
DNMG150612-VM	●	●	●	○	○	12.7	6.35	1.2	5.16	
	SNMG090304-VM	●	●	●	○	○	9.525	3.18	0.4	3.81
	SNMG090308-VM	●	●	●	○	○	9.525	3.18	0.8	3.81
	SNMG120404-VM	●	●	●	○	○	12.7	4.76	0.4	5.16
	SNMG120408-VM	●	●	●	○	○	12.7	4.76	0.8	5.16
	SNMG120412-VM	●	●	●	○	○	12.7	4.76	1.2	5.16
	SNMG190612-VM	●	●	●	○	○	19.05	6.35	1.2	7.93
	TNMG110308-VM	●	●	●	○	○	6.35	3.18	0.8	2.26
	TNMG160404-VM	●	●	●	○	○	9.525	4.76	0.4	3.81
	TNMG160408-VM	●	●	●	○	○	9.525	4.76	0.8	3.81
	TNMG160412-VM	●	●	●	○	○	9.525	4.76	1.2	3.81
	TNMG220404-VM	●	●	●	○	○	12.7	4.76	0.4	5.16
	TNMG220408-VM	●	●	●	○	○	12.7	4.76	0.8	5.16
	TNMG220412-VM	●	●	●	○	○	12.7	4.76	1.2	5.16
	VNMG160404-VM	●	●	●	○	○	9.525	4.76	0.4	3.81
	VNMG160408-VM	●	●	●	○	○	9.525	4.76	0.8	3.81
	VNMG160412-VM	●	●	●	○	○	9.525	4.76	1.2	3.81
	VNMG220404-VM	●	●	●	○	○	12.7	4.76	0.4	5.16
VNMG220408-VM	●	●	●	○	○	12.7	4.76	0.8	5.16	
	WNMG060404-VM	●	●	●	○	○	9.525	4.76	0.4	3.81
	WNMG060408-VM	●	●	●	○	○	9.525	4.76	0.8	3.81
	WNMG060412-VM	●	●	●	○	○	9.525	4.76	1.2	5.16
	WNMG080404-VM	●	●	●	○	○	12.7	4.76	0.4	5.16
	WNMG080408-VM	●	●	●	○	○	12.7	4.76	0.8	5.16
	WNMG080412-VM	●	●	●	○	○	12.7	4.76	1.2	5.16

● Stock item, ○ Under preparing for stock