

MITSUBISHI

MITSUBISHI CARBIDE

B068E

Chip Breakers for Low Carbon Steel

FY/SY breaker

A sharp chip breaker land for ideal chip control.

**Optimum chip control for
low carbon steels.**



■ Chip Breakers for Low Carbon Steel

FY/SY breaker

*Low carbon steel: Carbon steel with up to 0.3% carbon content, iron plate, STKM etc..

Machining problems

Unstable chips cause:—

Sudden insert fracturing
➔ **Low efficiency rate**

Flaws in work pieces
➔ **High scrap rates**

Machine stoppages
➔ **Difficult to automate**

FY and SY chip breakers for solving your machining problems.

Point

Non-tangling of chips is the key to the successful machining of low carbon steel.

Existing chip breakers

Long chips cause machine stoppages.



FY/SY chip breakers



Ideal chip shapes aid stable machining.

Existing chip breakers

Continuous chips tangle with the workpiece.



FY/SY chip breakers



Broken chips aid stable machining.

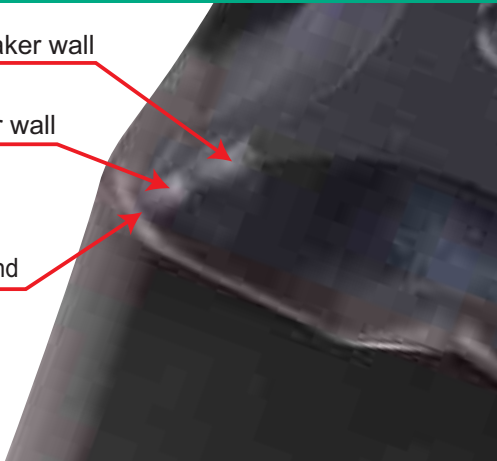
FY/SY breaker

FY chip breaker for finishing

Second breaker wall

First breaker wall

Peninsular land

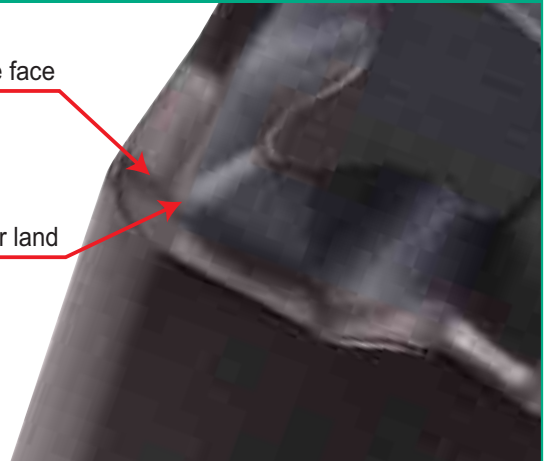


- Two-stage breaker walls at the peninsular land point ensures a good chip shape for low and high feed cutting.
- The wavy cutting edge creates ideally shaped chips even when copying.

SY chip breaker for semi-finishing

Wide rake face

Peninsular land



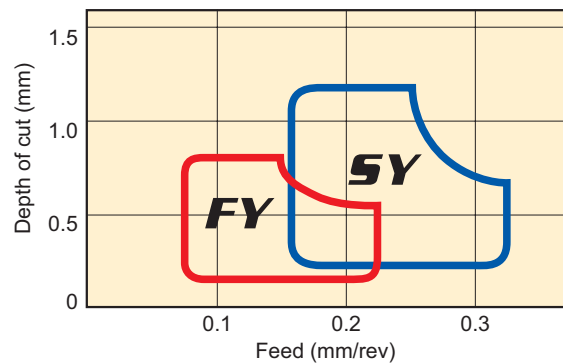
- The combination of a peninsular land and a wide rake face results in good chip dispersal.
- The wavy cutting edge creates ideally shaped chips even when copying.

Recommended cutting conditions

Work Material	Hardness	Breaker	Grade	Cutting Speed (m/min)
P Iron plate	80–120HB	FY	VP25N	290–450
			UE6020	290–460
		SY	VP25N	260–410
			UE6020	260–420
Low Carbon Steel Pipes	110–160HB	FY	VP25N	260–410
			UE6020	260–420
		SY	VP25N	240–370
			UE6020	240–390

Note) Mitsubishi's FH and SH breakers are recommended for general steel and alloy steel.

Chip control range

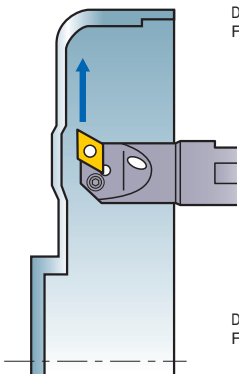


Cutting Performance

- An ideal chip shape aids high cutting performance.

<Cutting Conditions>

Work Material : Iron plate
Cutting Speed : 300m/min
Wet Cutting



Depth of cut : 0.3mm
Feed : 0.1mm/rev

Competitor A



FY breaker Ideal chip control



Competitor B



SY breaker Ideal chip control



Inserts

Shape	Order Number	Grade		Dimensions (mm)				Geometry
		Coated Cermet	Coated	D1	S1	Re	D2	
		VP25N	UE6020					
	CNMG120404-FY	●	●	12.7	4.76	0.4	5.16	
	120408-FY	●	●	12.7	4.76	0.8	5.16	
	DNMG150404-FY	●	●	12.7	4.76	0.4	5.16	
	150408-FY	●	●	12.7	4.76	0.8	5.16	
	SNMG120408-FY	●	●	12.7	4.76	0.8	5.16	
	TNMG160404-FY	●	●	9.525	4.76	0.4	3.81	
	160408-FY	●	●	9.525	4.76	0.8	3.81	
	WNMG080404-FY	●	●	12.7	4.76	0.4	5.16	
	080408-FY	●	●	12.7	4.76	0.8	5.16	
	CNMG120404-SY	●	●	12.7	4.76	0.4	5.16	
	120408-SY	●	●	12.7	4.76	0.8	5.16	
	DNMG150404-SY	●	●	12.7	4.76	0.4	5.16	
	150408-SY	●	●	12.7	4.76	0.8	5.16	
	SNMG120408-SY	●	●	12.7	4.76	0.8	5.16	
	TNMG160404-SY	●	●	9.525	4.76	0.4	3.81	
	160408-SY	●	●	9.525	4.76	0.8	3.81	
	WNMG080404-SY	●	●	12.7	4.76	0.4	5.16	
	080408-SY	●	●	12.7	4.76	0.8	5.16	



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