







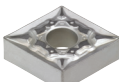

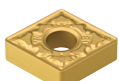





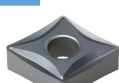





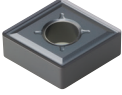

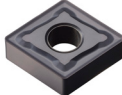

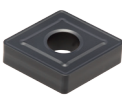

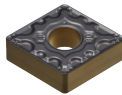

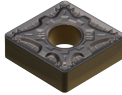







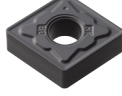

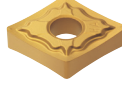

## Chip breaker for turning

Geometry	Cutting edge	Application range												Features		
		feed rate $f_n$ (mm/rev)														
		0.04	0.063	0.10	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3			
		depth of cut $a_p$ (mm)														
		0.1	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10.0	11.6	13		
V series	VL						0.10~0.35								<b>For Finishing</b> <ul style="list-style-type: none"> <li>Stable chip control in high toughness material; low carbon steel, pipe steel &amp; steel plates</li> <li>Improved chip control for facing, copy machining and better surface finish</li> </ul>	
	VB						0.15~0.45								<b>For Finishing</b> <ul style="list-style-type: none"> <li>Improved chip control for smaller depth of cuts</li> <li>Excellent chip control in copying, corner R machining</li> </ul>	
	VF				0.05~0.35											<b>For Finishing</b> <ul style="list-style-type: none"> <li>Good chip control quality on varied depth of cut</li> <li>Excellent cutting edge strength has been acquired due to the special chip-breaker</li> </ul>
	VC						0.12~0.45									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>Stable chip control in copying and internal machining with various depths of cut</li> </ul>
	VQ						0.10~0.40									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>Medium to finishing cutting edges offer improved edge hardness</li> <li>For cermet</li> </ul>
	VM						0.10~0.50									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>Wide available chip control range from medium-finishing to medium-roughing</li> <li>Suitable chip breaker for CNC machining</li> </ul>
	VH									0.70~1.40						<b>For Heavy duty cutting</b> <ul style="list-style-type: none"> <li>Designed specifically for heavy machining</li> <li>Specialized chip breaker for the heavy industries like Ship building, Power plant industry</li> </ul>
	VT									0.75~1.60						<b>For Heavy duty cutting</b> <ul style="list-style-type: none"> <li>Designed specifically for heavy machining</li> <li>Specialized chip breaker for the heavy industries like Ship building, Power plant industry</li> </ul>
	VP1						0.05~0.20									<b>For Finishing</b> <ul style="list-style-type: none"> <li>High positive cutting edge</li> <li>Reduced contract chip minimizes temperature to improve tool life</li> </ul>
	VP2						0.05~0.40									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>Stable chip control and high machinability in copying with various depths of cut</li> </ul>

Notice: Application ranges are based on main cutting material






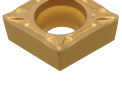
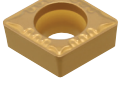
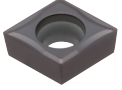
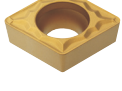

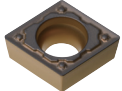
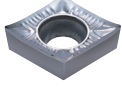
# Chip breaker for turning

Geometry	Cutting edge	Application range												Features										
		feed rate $f_n$ (mm/rev)																						
		0.04	0.063	0.10	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3											
depth of cut $a_p$ (mm)																								
												0.1	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10.0	11.6	13
V series	VP3			0.05~0.45 0.5~4.5												<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>High positive cutting edge with wide land</li> <li>Stable cutting performance in interrupted machining with high toughness</li> <li>Stable machinability and chip control in machining with high depth of cut</li> </ul>								
	VP4			0.15~0.45 1.0~4.5												<b>For Roughing</b> <ul style="list-style-type: none"> <li>The first recommended chip breaker for inconel cutting</li> <li>High hard and resistant rake angle to prevent notch wear in roughing of rugged surfaces</li> </ul>								
	VR			0.25~0.55 1.2~7.0												<b>For Roughing</b> <ul style="list-style-type: none"> <li>High feed machining with the combination of wide land and pockets</li> <li>Shallow chip breaker design prevents chip blocking at high feed</li> <li>Decreased wear on major cutting edge due to special treatment on blade</li> </ul>								
-P series	LP			0.10~0.40 0.5~2.5												<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>Angle land decreases cutting resistance for better surface roughness</li> <li>Special dot design prevents chip blocking by clear chip breaking</li> </ul>								
	MP			0.15~0.45 0.5~4.5												<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>Increased productivity due to excellent chip control in various conditions</li> <li>Stable tool life by reducing cutting load at high speed and high feed</li> </ul>								
-M series	MM			0.12~0.45 0.5~5.5												<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>The first recommended chip breaker for continuous stainless applications cutting</li> <li>Improved tool life and surface finish due to dual lands combining both machinability and toughness</li> <li>Wide chip pockets for stable chip evacuation at high depth of cuts and high feeds</li> </ul>								
	RM			0.15~0.55 2.0~6.0												<b>For Roughing</b> <ul style="list-style-type: none"> <li>The first recommended chip breaker for interrupted cutting or roughing of stainless steel</li> <li>Inhibited notch wear and burr creation at high depth of cuts and feeds</li> <li>Reduced cutting loads and longer tool life at high feeds</li> </ul>								
-K series	MK			0.10~0.50 1.0~5.0												<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>Suitable for continuous cutting of ductile and gray cast iron</li> <li>Excellent tool life and surface finish thanks to angle lands improving cutting performance</li> </ul>								
	RK			0.20~0.60 1.5~6.0												<b>For Roughing</b> <ul style="list-style-type: none"> <li>Suitable for machining ductile and gray cast iron at high speeds and high feeds</li> <li>Improved toughness and chipping resistance due to flat lands</li> </ul>								
H series	HA			0.03~0.30 0.5~2.5												<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>Sharp cutting edge generates low cutting force</li> <li>Specially designed tough main cutting edge</li> <li>Suitable for cutting of low carbon steel, stainless steel, aluminum</li> </ul>								

Notice: Application ranges are based on main cutting material



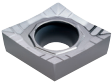

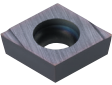

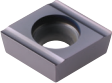



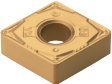



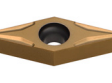

## Chip breaker for turning

Geometry	Cutting edge	Application range											Features	
		feed rate $f_n$ (mm/rev)												
		0.04	0.063	0.10	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0		6.3
depth of cut ap (mm)														
0.1	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10.0	11.6	13		
G series	GR							0.30~0.80			3.0~8.0			<b>For Roughing</b> <ul style="list-style-type: none"> <li>Suitable for deep depth of cut and high feed cutting of steel and cast iron</li> <li>Suitable for intermittent cutting</li> </ul>
	GH							0.30~1.30			3.0~11.0			<b>For Heavy duty cutting</b> <ul style="list-style-type: none"> <li>Suitable for heavy duty cutting due to strong cutting edge</li> <li>Wide chip control range with low cutting force</li> </ul>
B series	B25							0.50~1.00			4.0~10.0			<b>For General cutting</b> <ul style="list-style-type: none"> <li>Suitable for general cutting condition cutting</li> </ul>
V-Posi series	VF				0.05~0.25									<b>For Finishing</b> <ul style="list-style-type: none"> <li>Improved surface finish and size accuracy due to stable inner boring</li> </ul>
	VL				0.05~0.20									<b>For Finishing</b> <ul style="list-style-type: none"> <li>Superior chip control in low carbon steel, pipes, and steel plates</li> </ul>
	VP1				0.01~0.25									<b>For Finishing</b> <ul style="list-style-type: none"> <li>Excellent chip control in application with micro depth of cut and low feed</li> <li>Low cutting load and superb surface finish</li> <li>Optimal for both internal and external machining</li> </ul>
H-Posi series	HMP				0.08~0.40									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>Excellent chip control at wide range of cutting conditions</li> <li>Machining versatility over a wide range of materials</li> </ul>
C-Posi series	C25				0.10~0.35									<b>For Roughing</b> <ul style="list-style-type: none"> <li>Suitable for interrupted cutting and cast iron machining</li> <li>Good surface finish due to low cutting force</li> <li>Suitable for both boring and outer diameter turning</li> </ul>
P-Posi series	MP				0.05~0.30									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>Sharp cutting edge and wide chip pocket for low cutting load</li> <li>Stable chip control at varying depth of cuts</li> <li>Excellent cutting performance when machining automobile components</li> </ul>
AL series	AK				0.03~0.40									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>High rake angle and low resistance cutting edge secures long tool life in continuous cutting of aluminum turning</li> <li>High speed of finishing operation</li> </ul>

Notice: Application ranges are based on main cutting material



## Chip breaker for turning

Geometry	Cutting edge	Application range													Features	
		feed rate $f_n$ (mm/rev)														
		0.04	0.063	0.10	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3			
		depth of cut $a_p$ (mm)														
		0.1	0.16	0.25	0.4	0.63	1.0	1.6	2.5	4.0	6.3	10.0	11.6	13		
AL series	AR						0.05~0.50									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>• High stability of cutting edge secures great performance in high speed and interrupted machining</li> <li>• High speed of medium and interrupted operation</li> </ul>
								0.5~4.0								
Auto tool series	KF						0.01~0.12									<b>For Finishing</b> <ul style="list-style-type: none"> <li>• Shallow depth of cut with sharp edge</li> <li>• Longer tool life at high speed cutting due to low cutting force</li> <li>• Good surface finish</li> </ul>
								0.01~1.0								
Auto tool series	KM						0.04~0.15									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>• Improved chip control makes tool life long and better machining</li> </ul>
								0.05~1.5								
For Wiper	LW						0.15~0.60									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>• Guarantees excellent surface roughness and good chip controls at high feed machining</li> </ul>
									1.0~5.0							
For Wiper	VW						0.15~0.50									<b>For Medium to finish cutting</b> <ul style="list-style-type: none"> <li>• Improved surface roughness at shallow depth of cut and high feed due to strong cutting edge</li> </ul>
									0.5~3.5							
For Shaft	SR						0.12~0.45									<b>For Finishing</b> <ul style="list-style-type: none"> <li>• Shallow depth of cut with sharp edge</li> <li>• Longer tool life at high speed cutting due to low cutting force</li> <li>• Good surface finish</li> </ul>
										1.0~4.5						
For Shaft	SH						0.15~0.50									<b>For Medium cutting</b> <ul style="list-style-type: none"> <li>• Good chip flow increases tool life and machinability.</li> </ul>
											1.5~5.0					

Notice: Application ranges are based on main cutting material