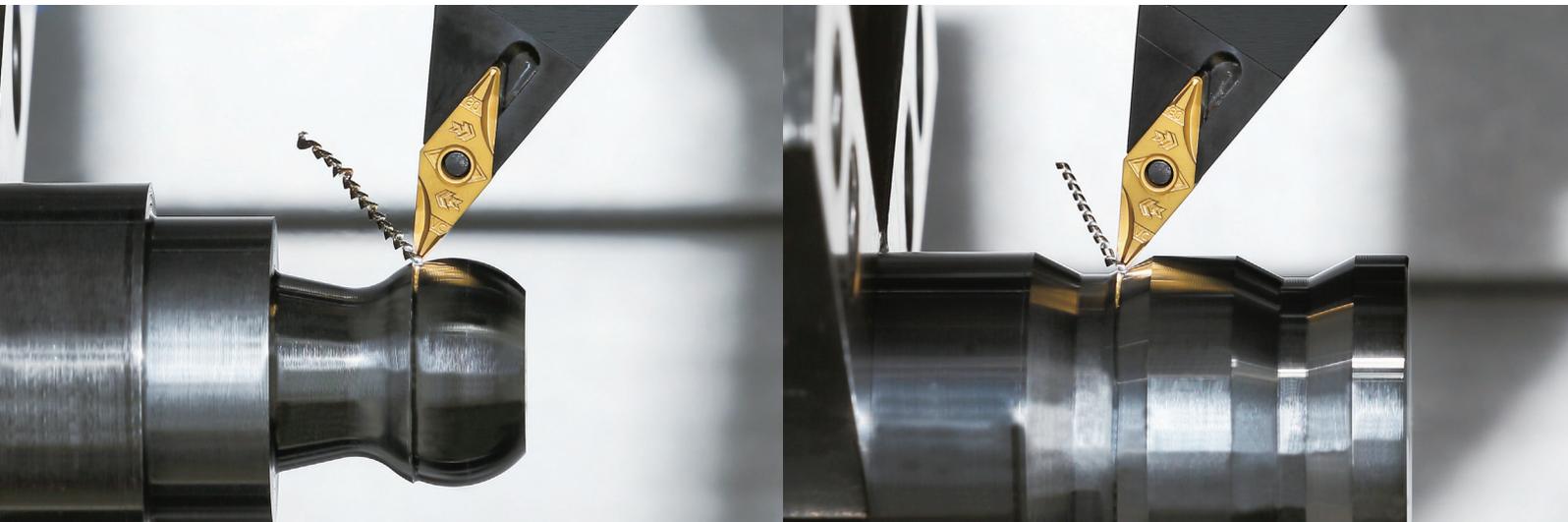


THE NEW VALUE FRONTIER



Chipbreaker for copying | **VC**

VC Chipbreaker



High productivity for machining various shapes / contours

Excellent chip control in a wide range of machining applications

Strong edge design



For copying

VC Chipbreaker

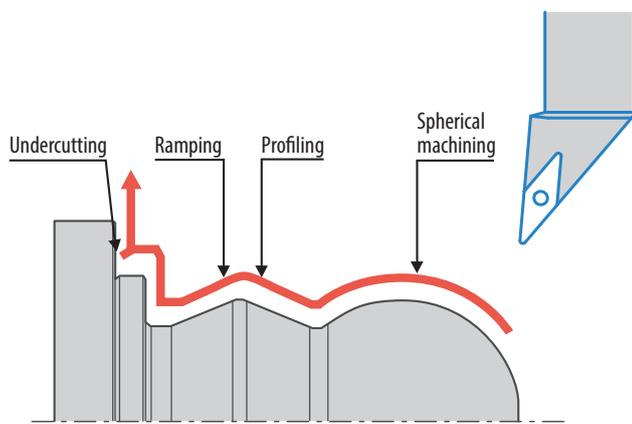
High productivity for machining various shapes/contours

1

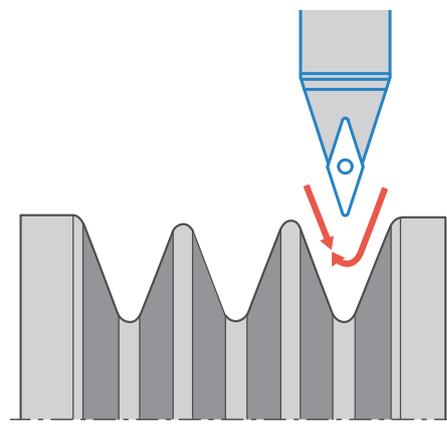
Excellent chip control in a wide range of machining applications

High stability for copying in difficult chip control situations and V-grooving.

Copying



V-Groove



Large cutting land by handed design

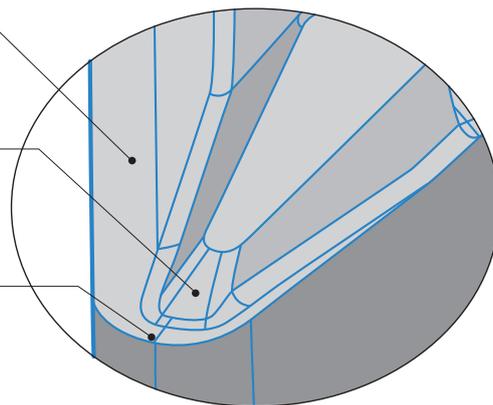
Stable chip control even in large depths of cut.

Main dot

Stable chip control even at small depths and low feed rates.

Insert edge geometry creates stable machining

Stable edge strength and chip control by constant rake angle from corner radius to main cutting edge.

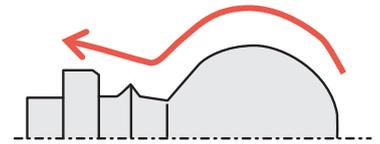


Left-hand shown

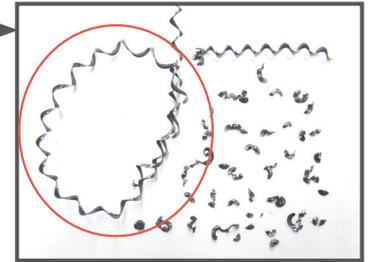
The VC chipbreaker breaks chips into smaller pieces even at large depths of cut with smooth chip control preventing tangling on the workpiece.

Chip control performance (Ball stud) (In-house evaluation)

ap (mm)	2.0	1.5	1.0	0.7	0.5	0.2
VC chipbreaker (Left-hand)						
Competitor A						



VC Chipbreaker

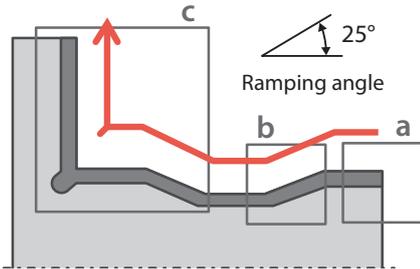


Competitor A

Cutting conditions: $V_c = 250 \sim 300$ m/min ($n = 2,500$ min⁻¹), $f = 0.2$ mm/rev, wet
VNMG160408 type; workpiece: 15CrMo5

VC chipbreaker provides smooth chip control for general turning (a), ramping (b) and profiling (c).

Chip control performance (Copying/undercutting) (In-house evaluation)

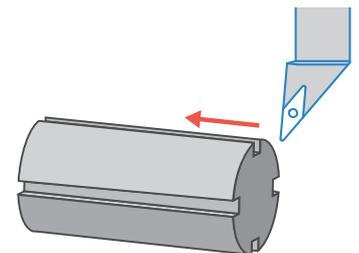
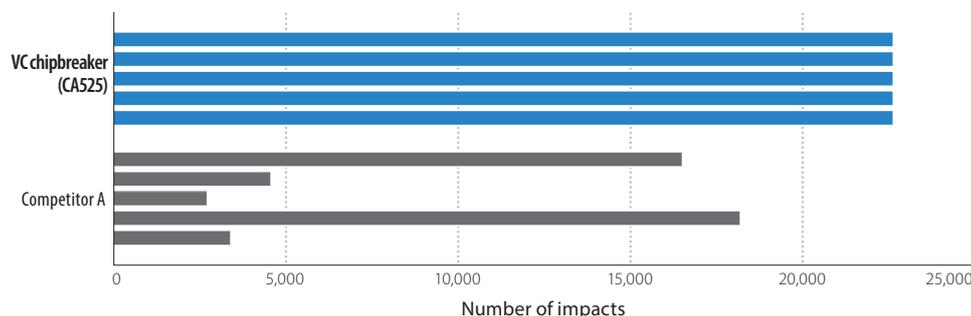


	Straight line (a)	Ramping (b)	Profiling (c)
VC Chipbreaker (Left-hand)			
Competitor A			

Cutting conditions: $V_c = 200 \sim 300$ m/min ($n = 2,500$ min⁻¹), $ap = 1.0$ mm, $f = 0.2$ mm/rev, wet
VNMG160408 type; workpiece: 15CrMo5

2 Strong edge design

Fracture resistance comparison (In-house evaluation)



Cutting conditions: $V_c = 200$ m/min, $ap = 0.5$ mm
 $f = 0.25$ mm/rev, interrupted, wet
VNMG160408 type
Workpiece: 42CrMo4 (Workpiece with 4 grooves, 5 mm width each)

Available inserts

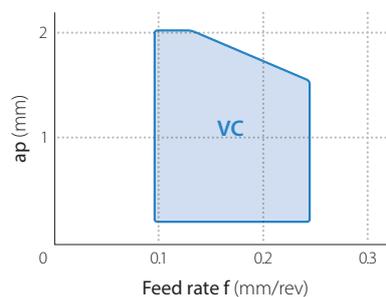
Shape Right-hand shown	Description	Dimensions (mm)				Cermet		MEGACOAT NANO cermet		CVD coated carbide				
		I.C.	Thickness	Hole	Corner-R (rε)	TN610	TN620	PV710	PV720	CA510	CA515	CA525	CA530	
 Finishing – Medium	VNMG160404 ^R / _L -VC	9.525	4.76	3.81	0.4	●	●	●	●	●	●	●	●	
	VNMG160408 ^R / _L -VC				0.8	●	●	●	●	●	●	●	●	●
	VNMG160412 ^R / _L -VC				1.2	●	●	●	●	●	●	●	●	●

● Available

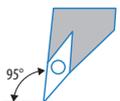
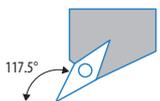
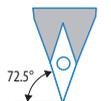
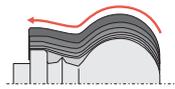
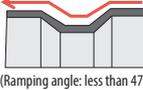
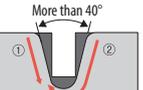
Cutting conditions

Workpiece	Insert grade	Min. - Recommendation - Max.		
		Cutting speed Vc (m/min)	ap (mm)	Feed rate f (mm)
Carbon steel / Alloy steel	TN610	130 – 230 – 340	0.3 – 1.0 – 2.0	0.08 – 0.18 – 0.25
	TN620	100 – 200 – 300		
	PV710	140 – 280 – 380		
	PV720	130 – 250 – 340		
	CA510	180 – 260 – 340		
	CA515	150 – 240 – 320		
	CA525	140 – 220 – 300		
CA530	120 – 180 – 250			

Applicable chipbreaker range



Application and selection of recommended holders

	D(P)VLN type toolholder	D(P)VPN type toolholder	D(P)VVNN type toolholder
			
Ball stud			 Turning/back turning possible (Depth of cut less than 0.5 mm for back turning)
Copying	 (Ramping angle: less than 47°)	 (Ramping angle: less than 25°)	
V-groove			 More than 40°

Left handed insert for normal mounting