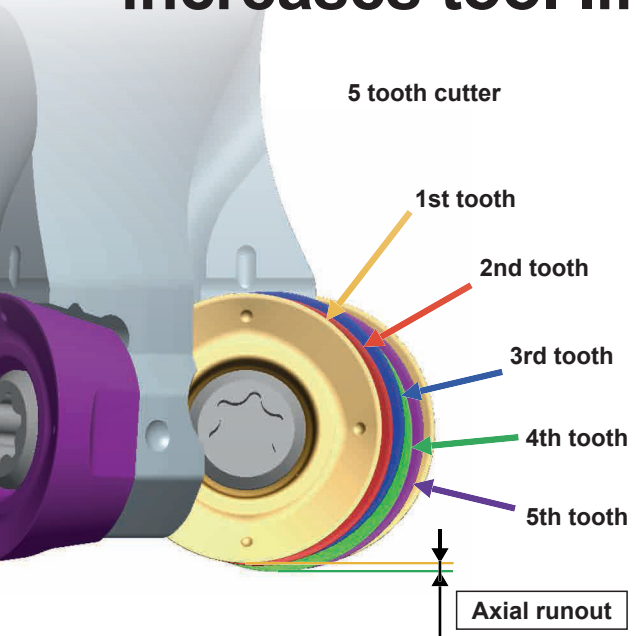


ARP

Round insert cutter for difficult-to-cut materials
Highest level of run-out accuracy
increases tool life.



Highly accurate seating realises minimal change of run-out accuracy when indexing the inserts.

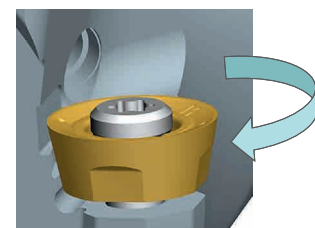
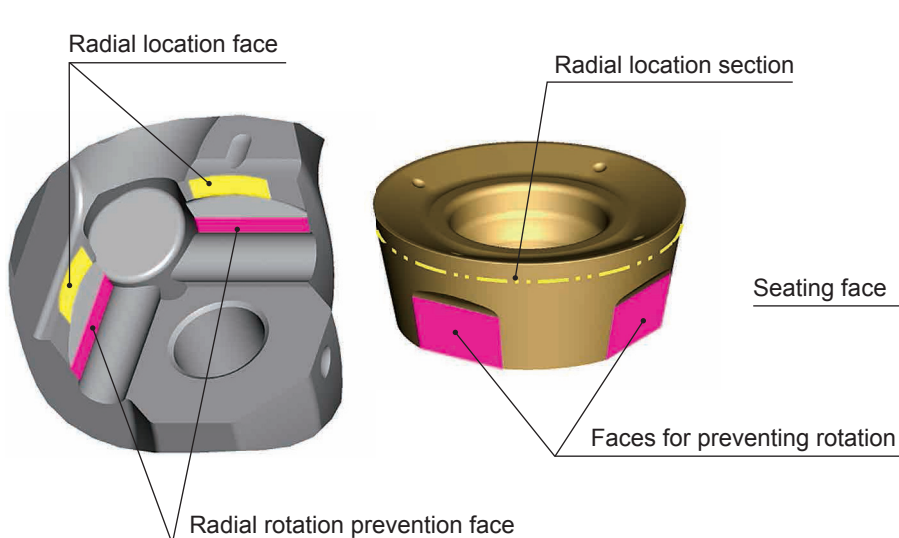
Compared to conventional tools

Axial runout
25%
improvement



Strong clamping system

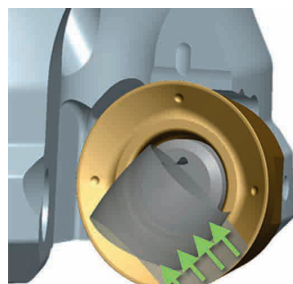
A wide seating face and 2 side location faces prevent inserts from moving during cutting.



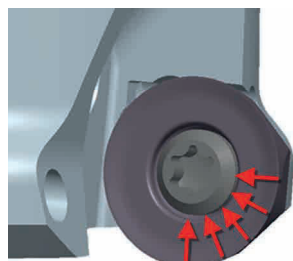
Easy indexing - No need to completely remove the clamping screw

Optimised chip flow for low cutting resistance

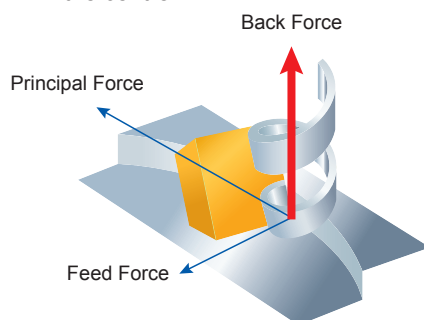
Special rake face on each quadrant of the insert provides the smooth chip flow for low cutting resistance.



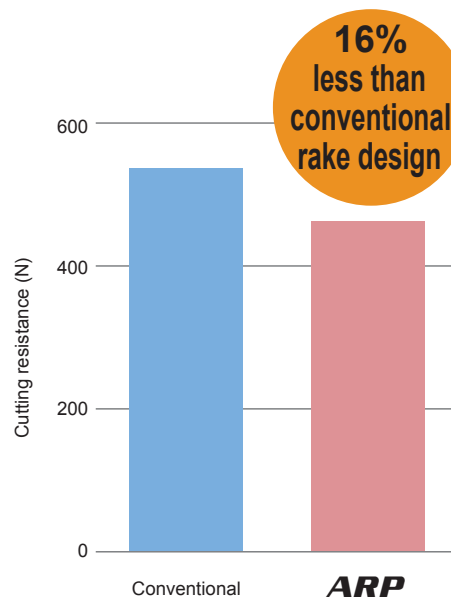
Even chip flow



Conventional insert chip flow compressed towards the centre.



[Comparison of back force]



Cutting of DIN X5CrNi189

Advice for high efficiency machining

Fine and super fine pitch cutters improve efficiency by 10-20% when compared to a regular pitch type.

Arbor type

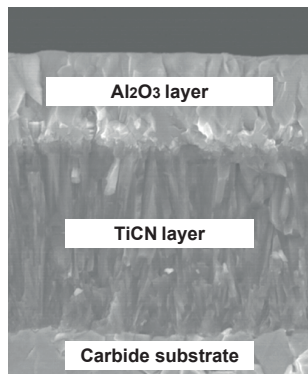
DC (mm)	ARP5		ARP6	
	Fine Pitch	Extra Fine Pitch	Fine Pitch	Extra Fine Pitch
40 mm	5		4	
42 mm	5	6		
50, 52 mm	6	7	5	6
63, 66 mm	7	8	6	7
80 mm			8	9
100 mm			9	11

Efficiency
10-20%
UP

CVD coated grade for machining of stainless steel

NEW MC7020

MC7020 has excellent wear, chipping and thermal crack resistance. These features prevent the problems usually associated with machining stainless steel over prolonged periods



Structure of MC7020

Reduced abnormal damage

An extremely smooth black super-smooth coating prevents abnormal damage such as weld chipping.

Improved wear resistance

The micro-grain wear resistant Al₂O₃ and fibrous TiCN layers deliver excellent wear resistance when milling a wide range of stainless steel.

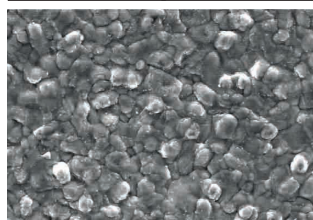
Improved fracture resistance

Use of a specially developed cemented carbide that provides superior resistance to fracture and thermal cracking prevents the cutting edge from sudden fracturing.

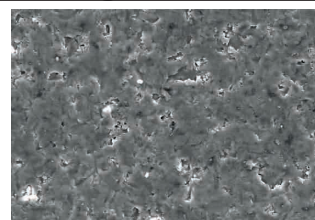
All black super smooth coating

This smooth outer layer helps to prevent weld chipping.

Comparison of Coating Surface



Conventional coating



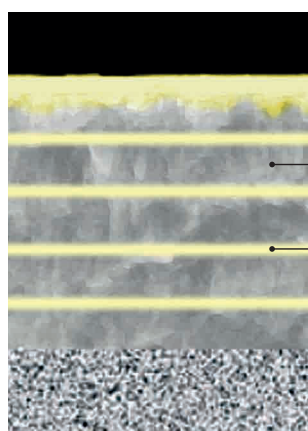
All black super-smooth coating

With accumulated Al-Ti-Cr-N based PVD coating

MP7100, MP9100

TOUGH-Σ Technology

A fusion of the separate coating technologies; PVD and multi-layering realises extra toughness.

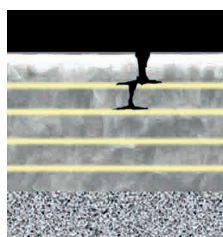


*Graphical representation.

Base layer High Al-(Al, Ti)N

The new technology Al-(Al, Ti)N coating provides stabilisation of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

Each grade has a layer suitable for each application area



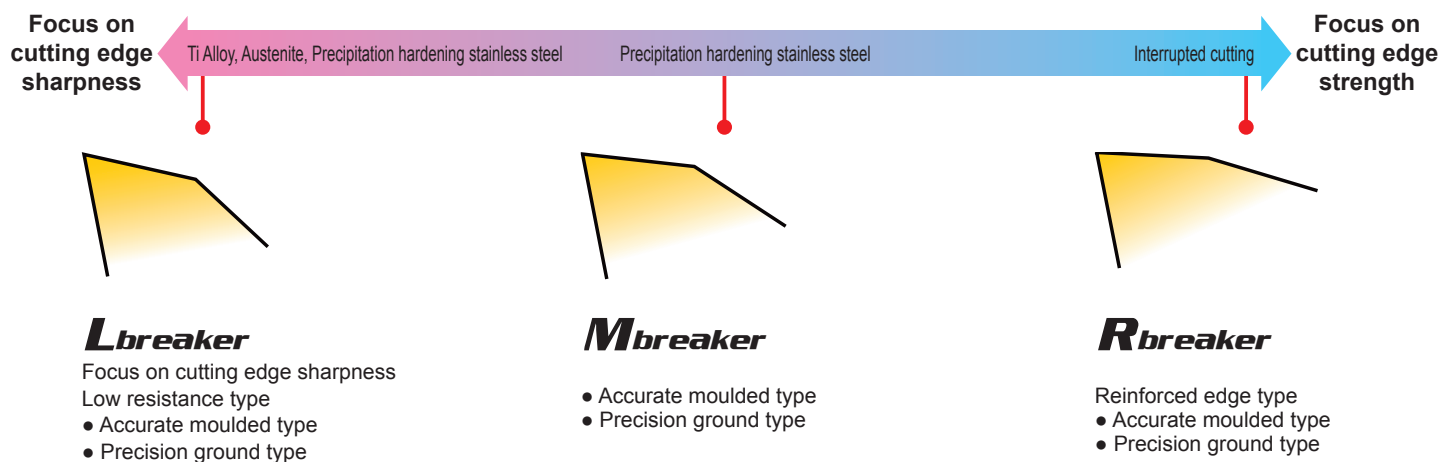
*Graphical representation.







Multi-layering of the coating prevents any cracks penetrating through to the substrate.



M	TiN	<p>Sample of notch wear</p>
	Tough against notching	
S	CrN	<p>Sample of weld chipping</p>
	Tough against chipping	


Breaker system

Breaker series for various applications



Work Material	Cutting Condition		
	Light	General	Heavy
M			
S			

	ISO	Application range	
		CVD	PVD
Stainless Steel	M10		
	M20		
	M30		
	M40		

	ISO	Application range
		PVD
Heat Resistant Alloy • Ti Alloy	S10	
	S20	
	S30	
	S40	