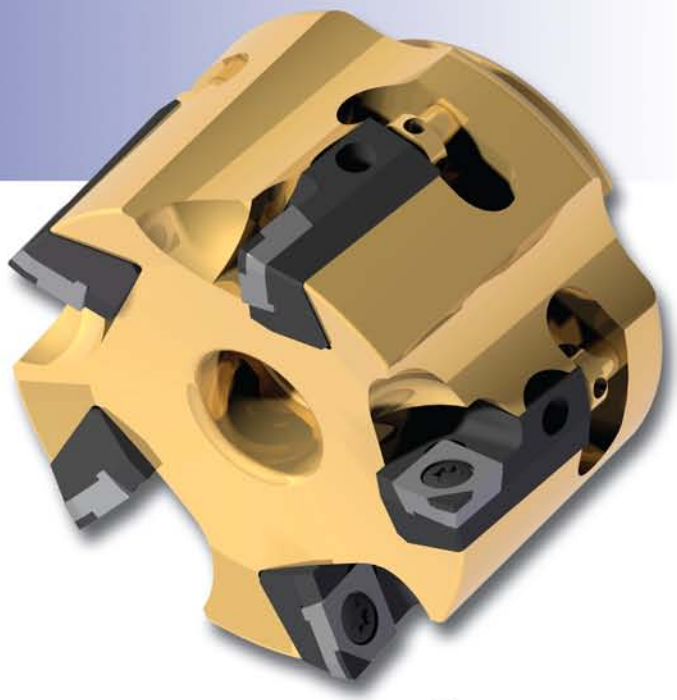
TCP90-AL

Engineered for High Speed Machining



New advanced milling cutter program engineered for high speed machining of non-ferrous material!

Ultra precise finishing with unique wiper-radius PCD inserts and micro-adjustable cartridges!

Milling cutter bodies constructed from lightweight 7075-T6 aviation grade aluminum to maximize RPM while minimizing machine spindle wear!

MaxiCool through coolant enabled for maximum chip evacuation and temperature control!

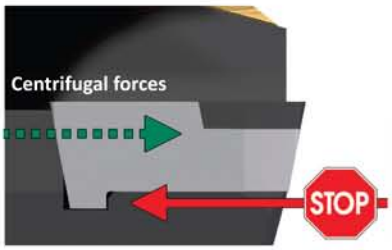
New CVD diamond grade for extreme tool life!

New Addition!

MXC

Security Features

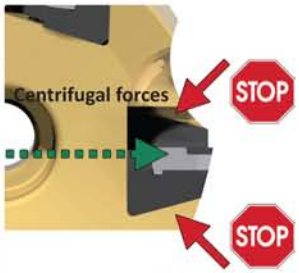
Insert Double Lock



Secondary insert step locks against matching step on insert cartridge

Designed to act as a double lock in conjunction with the insert tapered screw

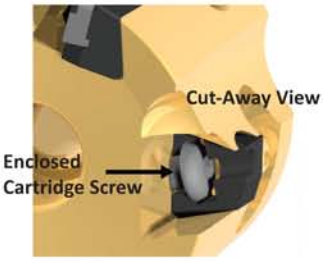
Cartridge Dovetail Lock



Insert cartridge is fitted into cutter body with dovetail design

Centrifugal forces acting on insert cartridge are neutralized by wedge profile of cartridge and matching shape on cutter body

Enclosed Cartridge Clamping Screw

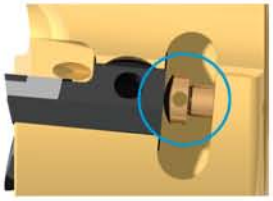


Unique cartridge shrouds cartridge clamp screw within steel body

Potential screw breakage is contained within steel of cartridge – the screw has no place to eject

Performance Features

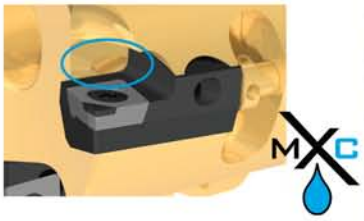
Micro Adjustable



Easily pre-set cartridges to within microns

All new milling cutters are factory pre-set in height to within ±0.0004 with a master gauge insert

Through Coolant Enabled



Coolant ports are directed at the cutting edge to extend tool life and improve surface finishes

Wiper Radius

Unique wiper is a compound radius that outperforms traditional wiper flats

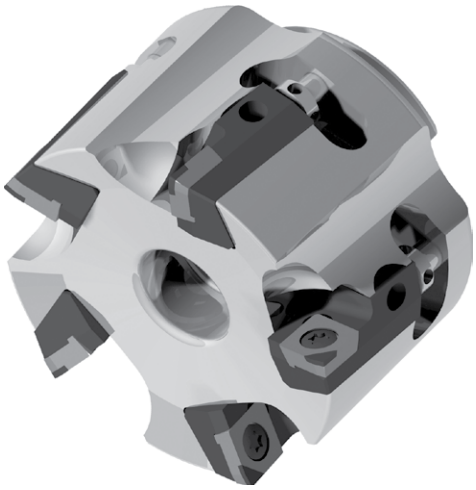
With every insert in the cutter loaded with the wiper radius, super finishing is easily attained

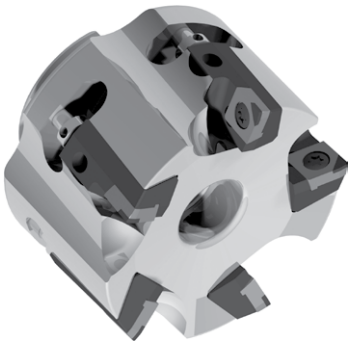
TCP90-AL

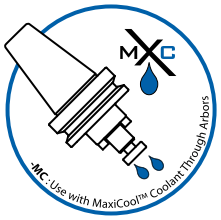
Face Mills for PCD Milling Applications

Featuring BECKER PCD Inserts

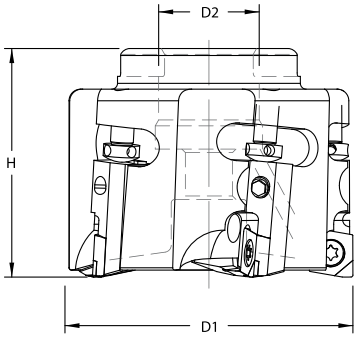
- New advanced milling cutter program engineered for high speed machining of non-ferrous material!
- Ultra precise finishing with unique wiper-radius PCD inserts and micro-adjustable cartridges!
- Milling cutter bodies constructed from lightweight 7075-T6 aviation grade aluminum to maximize RPM while minimizing machine spindle wear!
- MaxiCool through coolant enabled for maximum chip evacuation and temperature control!
- New CVD diamond grade for extreme tool life!







New Addition!



Face Mills for PCD Milling Applications

Designation	D1	D2	H	Flutes	Insert	Cartridge	Cartridge Clamp Screw	Insert Torx Screw	Height Adj. Screw
TCP90-2000-AL	2.000	.750	2.00	3	CPGW-32.51PDR	BC1000X500	M5 SHBS	TCP951	HAS6823
TCP90-2500-AL	2.500	1.000	2.00	5					
TCP90-3000-AL	3.000	1.000	2.00	7					
TCP90-4000-AL	4.000	1.250	2.00	10					
TCP90-5000-AL	5.000	1.500	2.00	11					
TCP90-6000-AL	6.000	1.500	2.00	13					

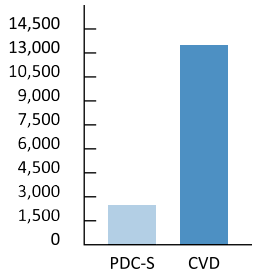
Performance Report

Application:
Milling the face of a cast aluminum oil pan. Material is A380 Aluminum consisting of 9% silicon.

Cutting Data:
100mm diameter cutter (Z=10)
8000 RPM (through tool coolant)
5420 mm/min feedrate
1-2mm D.O.C.
Rz = 1.8 micron

Part life:
PDC-S= 2,500 pieces
CVD= 13,500 pieces

540% Increase in tool life using CVD



TCP90-AL

Face Mills for PCD Milling Applications

PDC-S

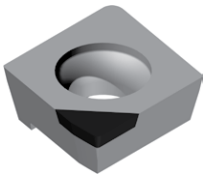
Performance: Polycrystalline carbide reinforced diamond of coarse grit size, good edge sharpness and low cutting pressure allowing close tolerances. Best performances for milling. High flank wear resistance and toughness.

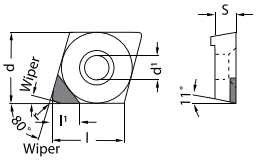
Application: Finishing, general purpose and milling of all non-metallics with medium to high content of abrasive reinforcement or silicon.

CVD

Performance: Solid diamond with no structure. Cutting edge is extremely sharp and without microfractures generating no cutting pressure, allowing burr-free results with tolerances close to zero. Extremely flank wear resistant with maximum thermal conductivity, and good toughness.

Application: Super finishing to roughing of all nonferrous metals and non-metallics with abrasive reinforcement or silicon. (HSC - High Tech)



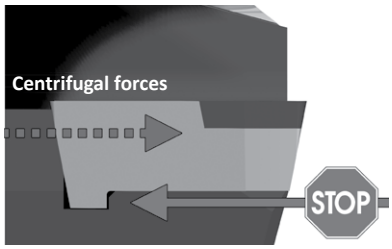


CPGW with Wiper

Designation	l	l1	s	r	d	d1	DP									
							PDC-S	CVD								
CPGW-32.51PDR	.382	.169	.156	.016	.375	.173	●	●								

Security Features

Insert Double Lock



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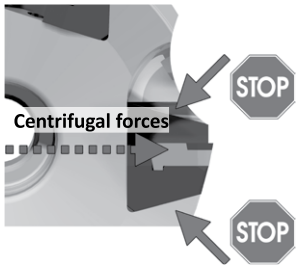

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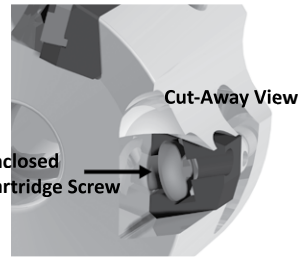

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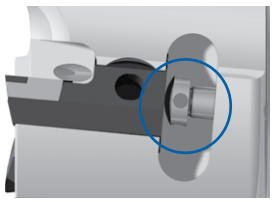

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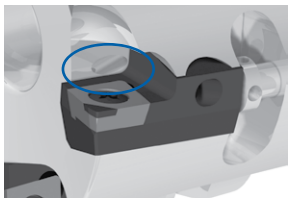

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Cutting Data

for TCP90 Milling Cutters

Materials	Conditions of Chip Removal	Application Range - Cutting Speed N01 - N40		
		N01 - N20 (HSC)	**N20 - N30 (HSC)**	**N25 - N40 (HSC)**
	High-Speed Milling	100 µin - 200 µin	100 µin - 200 µin	100 µin - 200 µin
N Nonferrous metals Aluminum alloys without silicon	unstable (varied depth)	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-14625	2600-13000	2600-8125
	continuous	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-14625	2600-13000	2600-8125
	heavily + slightly interrupted	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-14625	2600-13000	2600-8125
N Nonferrous metals Aluminum alloys with less than 12% silicon	unstable (varied depth)	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-13000	2600-11375	2600-8775
	continuous	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-13000	2600-11375	2600-8775
	heavily + slightly interrupted	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-13000	2600-11375	2600-8775
N Nonferrous metals Copper and copper alloys brass, bronze, precious metals	unstable (varied depth)	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-9750	2600-8125	2275-7150
	continuous	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-9750	2600-8125	2275-7150
	heavily + slightly interrupted	PDC-S / CVD	PDC-S / CVD	PDC-S / CVD
		2600-9750	2600-8125	2275-7150
Coolant: Flood or through coolant