



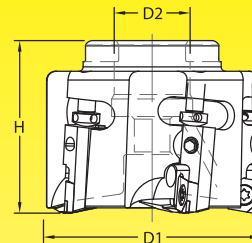
# TCP90-AL Milling Cutters

## Featuring TV Carb TFC Inserts

Aluminium face milling cutter program engineered for high speed machining of all non-ferrous materials

- Advanced milling cutter program engineered for high speed machining of non-ferrous materials
- Ultra precise finishing with unique wiper radius PCD / TFC inserts and micro-adjustable cartridges
- Maxicool through coolant enabled for maximum chip evacuation and temperature control
- Milling cutter bodies made from lightweight 7075-T6 aviation grade aluminum
- New TFC diamond grade for extreme tool life!

**Engineered for High Speed Machining!**



### TCP90 Face Mills for PCD / TFC Milling Applications

Designation	D1	D2	H	Flutes	Insert	List Price	PROMO PRICE	Cartridge	Cartridge Clamp Screw	Insert Torx Screw	Height Adj. Screw
TCP90-2000-AL	2.00	.75	2.00	3	CPGX-32.51...	\$499.00	\$379.00	BC10X50	M5 SHBS	TCP951	HAS6823
TCP90-2500-AL	2.50	1.00	2.00	5		\$699.00	\$539.00				
TCP90-3000-AL	3.00	1.00	2.00	7		\$899.00	\$699.00				
TCP90-4000-AL	4.00	1.25	2.00	10		\$1199.00	\$969.00				
TCP90-5000-AL	5.00	1.50	2.50	11		\$1399.00	\$1149.00				
TCP90-6000-AL	6.00	1.50	2.50	13		\$1699.00	\$1359.00				
TCP90-8000-AL	8.00	2.00	2.50	16		\$1999.00	\$1629.00				

### CPGX Milling Insert with Wiper

Designation	d	d <sup>1</sup>	s	l	l <sup>1</sup>	r	TFC	PROMO PRICE	PDC-CU-S	PROMO PRICE
							PD		DP	
CPGX-32.51PDR	.375	.173	.156	.382	.169	.016	■	\$89. <sup>95</sup>	■	\$69. <sup>95</sup>
CPGX-32.51NWR							■		■	
CPGX-32.51FLW							■		■	
CPGX-32.51SFR							■		■	

### Application: TCP90 Milling Cutter

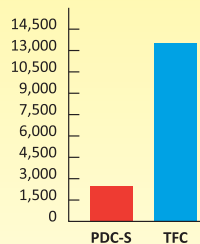
Milling the face of a cast aluminum oil pan.  
Material is A380 Aluminum consisting of 9% silicon.

### Cutting Data:

4.00" diameter cutter (Z=10)  
8000 RPM (through tool coolant)  
213 IPM feedrate  
0.040 - 0.080" D.O.C.  
32 RMS

### Part life:

PDC-S= 2,500 pieces  
TFC= 13,500 pieces



### Chipbreaker Information

PDR	Crown radius wiper. Suitable for general purpose applications with stable set-ups.
NWR	Full radius insert with no wiper facet. Suitable for unstable set-ups or thin wall parts. Excellent for sealing surfaces.
FLW	Flat wiper facet for general machining and unstable set-ups.
SFR	Very large crown radius wiper facet. Suitable for super finishing on very stable thick wall parts.



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Available From:

## TFC ... For Extreme Performance

**Performance:** Solid diamond with no binder. 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)

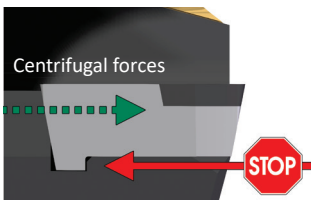
## PDC-CU-S

**Performance:** Solid polycrystalline diamond (compound cutting material) without carbide reinforcement, coarse grit size, good cutting edge sharpness and low cutting pressure allowing for minor tolerances. Well suited for milling tools with high depth of cut.

**Application:** Finishing and milling of all non-ferrous metals and non-metallics with high content of abrasive reinforcement or silicon.

Security Features

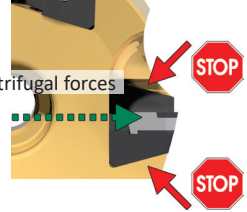
### Insert Double Lock



Secondary insert step locks against matching step on insert cartridge

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

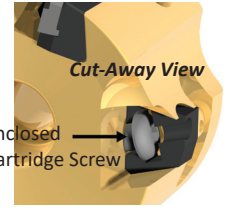
### Cartridge Dovetail Lock



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

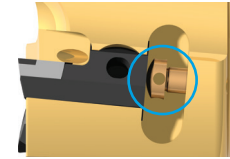


Unique cartridge shrouds cartridge clamp screw within steel body

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  $\pm 0.0004$  with a master gauge insert

### Through Coolant Enabled



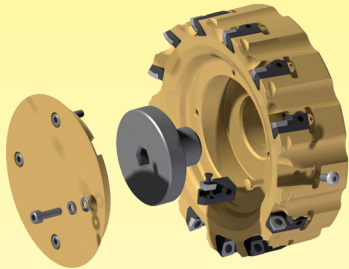
Coolant ports are directed at the cutting edge to extend tool life and improve surface finishes

### 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



## Coolant Caps

- Optional Coolant Caps available for larger cutter diameters to provide 360° direct coolant supply at the cutting edge
- Balanced by design and mounted securely to maintain constant coolant supply at maximum RPM
- Made from the same lightweight 7075-T6 aviation grade aluminum as cutter bodies for reliable long term use and service



Cutter Designation	Thru Coolant Cap Screw	Coolant Cap	Mounting Cap Screw	Lock Washer	Washer
TCP90-5000-AL	CCS-125	CTP-125	SHCS-M4	LW-M4	W-M4
TCP90-6000-AL	CCS-160	CTP-160	SHCS-M5	LW-M5	W-M5
TCP90-8000-AL	--	CTP-200	SHCS-M8	LW-M8	W-M8

When ordering Coolant Caps, Mounting Cap Screws and Washers are included. Thru Coolant Cap Screw must be purchased separately.

Materials	Conditions of Chip Removal	Application Range - Cutting Speed N01 - N40		
		N01 - N20 (HSC)	N20 - N30 (HSC)	N25 - N40 (HSC)
N Nonferrous metals Aluminum alloys without silicon	High-Speed Milling	3.2µin - 100µin	100µin - 200µin	200µin - 400µin
	continuous	TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
		2600-14625	2600-13000	2600-8125
heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S	
N Nonferrous metals Aluminum alloys with less than 12% silicon	continuous	2600-14625	2600-13000	2600-8125
		PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
	heavily + slightly interrupted	2600-1300	2600-11375	2600-8775
N Nonferrous metals Copper and copper alloys brass, bronze, precious metals	continuous	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
		2600-13000	2600-11375	2600-8775
	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
N Non-metallics with re-inforcement (GFK/CFK/Graphite)	continuous	2600-9750	2600-8125	2275-7150
		TFC	PDC-CU-S / TFC	PDC-CU-S
	heavily + slightly interrupted	1000-7000	700-6000	500-5000
N Non-metallics with re-inforcement (GFK/CFK/Graphite)	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
		1000-7000	700-6000	500-5000

Coolant: Flood or through coolant | Proper wiper radius required for application

**PROMO PRICING EXPIRES FEBRUARY 28TH, 2020**