

THE NEW VALUE FRONTIER



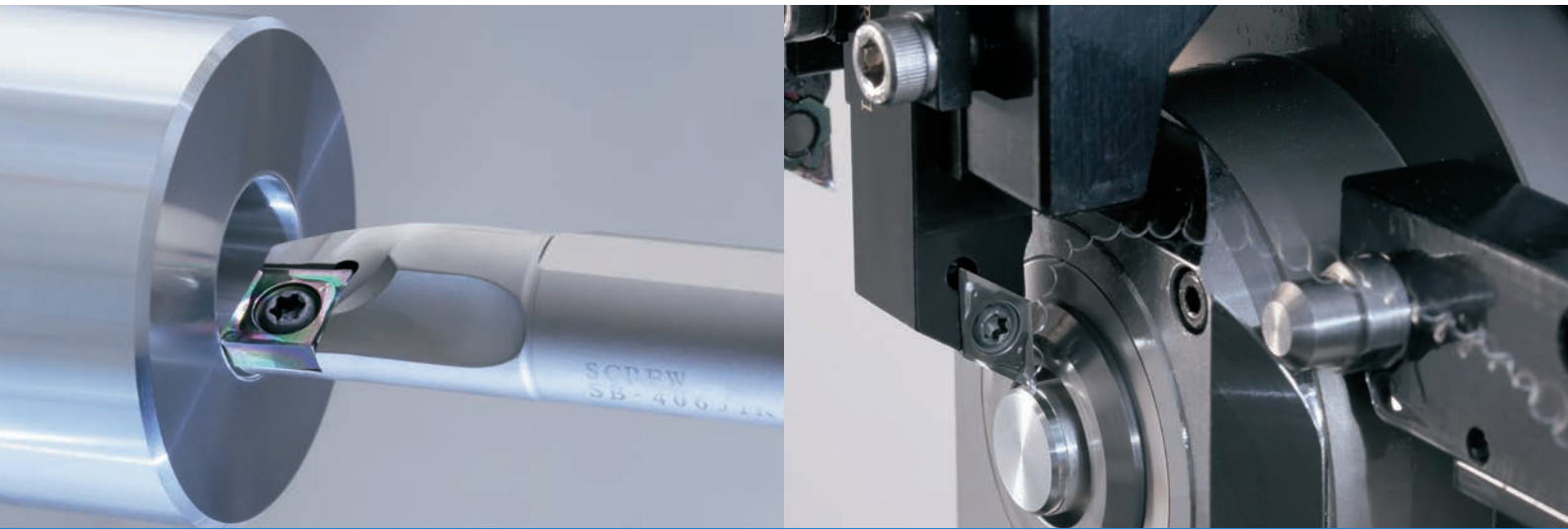
Positive Chipbreaker for  
Aluminum Finishing

AP Chipbreaker

Positive Chipbreaker for Aluminum Finishing

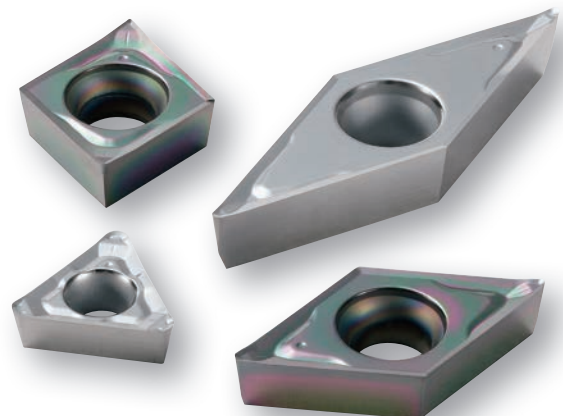
# AP Chipbreaker

NEW



Provides Excellent Surface Finish when Finishing Aluminum

Improved Chip Control during Aluminum Finishing Applications  
Combination of Sharp Cutting Edge and DLC Coating Prevents Burrs

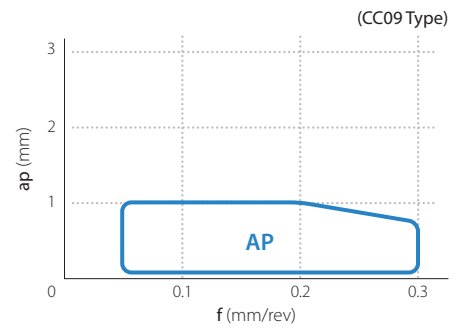


Positive Chipbreaker for Aluminum Finishing

# AP Chipbreaker

Improved Chip Control during Aluminum Finishing Applications

Applicable Chipbreaker Range



## 1 Improved Chip Control during Finishing

Optimized chipbreaker provides better chip control

**Concave Face**  
Excellent chip control when finishing at large D.O.C.

**Large Rake Angle**  
Sharp cutting edge suppresses cutting forces

**Curved Cutting Edge**  
Curved corner edge creates better chip flow

**Optimized rake and bottom surface design**  
Creates small curled chips

Chipbreaker corner cross-section

Chip Control Comparison (Internal Evaluation)

### External Turning



Cutting Conditions :  $V_c = 400$  m/min,  $a_p = 0.5$  mm,  $f = 0.15$  mm/rev, Wet, CC \*\*09T304 Type  
Workpiece : A6061

### Internal Turning

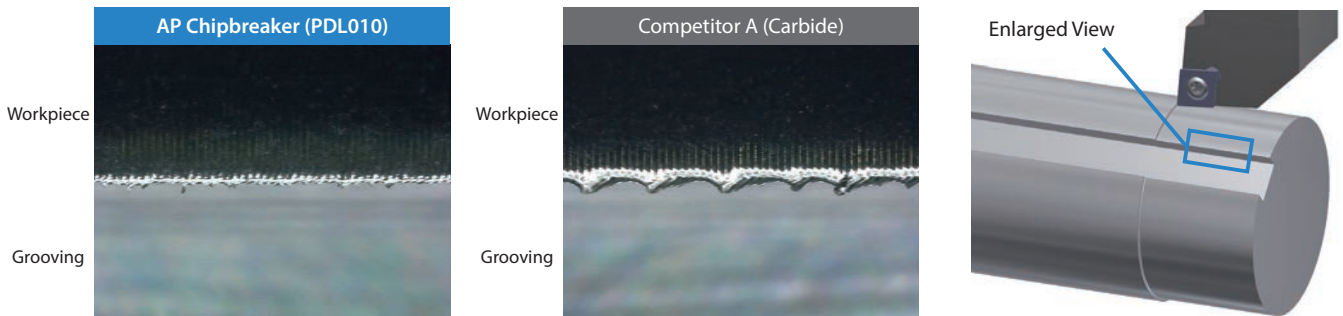


Cutting Conditions :  $V_c = 400$  m/min,  $a_p = 0.3$  mm,  $f = 0.15$  mm/rev, Wet, CC \*\*09T304 Type  
Workpiece : A6061

AP chipbreaker showed better chip control than competitors for both external and internal turning

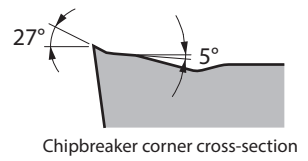
## 2 Sharp Cutting Edge and DLC Coating Prevent Burrs

Burr Comparison when Exiting the Hole (Internal Evaluation)

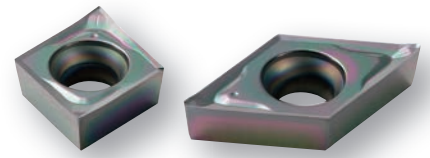


AP Chipbreaker (PDL010) suppressed burrs of exiting the hole

Cutting Conditions : Vc = 400 m/min, ap = 0.25 mm, f = 0.12 mm/rev, CC \*\*09T304 Type, Wet, External Turning  
Workpiece : A5052

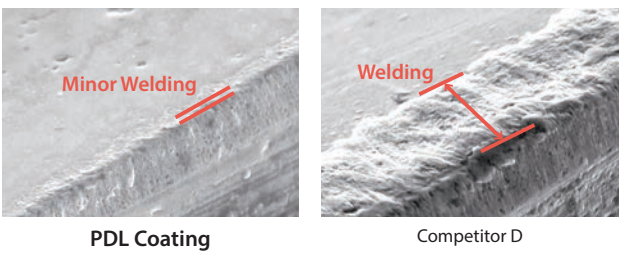


## 3 DLC Coated Grade PDL010 is Available



Excellent Surface Finish with Aluminum Welding Resistance

Welding Resistance Comparison (Internal Evaluation)

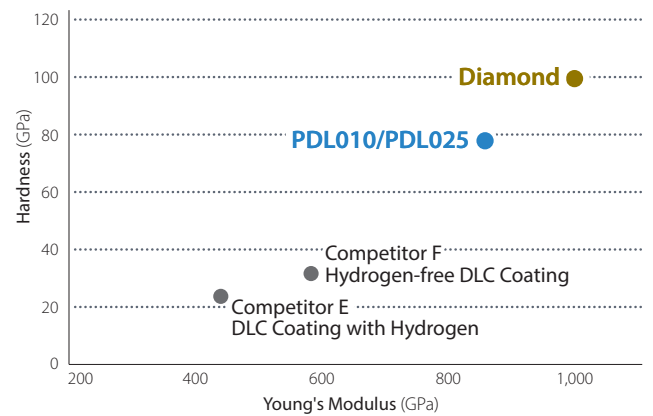


Cutting Conditions : Vc = 800 m/min, fz = 0.1 mm/t, ap x ae = 3 x 5 mm, Dry  
Cutter Dia. ø25 mm Workpiece : A5052 Cutting Length : 57 m

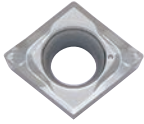

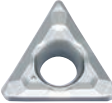

Achieves Long Tool Life with Hardness Close to that of Diamond

High Hardness with Kyocera's Proprietary Hydrogen-free DLC Coating

Coating Properties (Internal Evaluation)



## Stock Items

Shape	Description	Dimensions (mm)					Grade	
		I.C.	Thickness	Hole	Corner-R (RE)	Relief Angle	DLC coating	Carbide
							PDL010	KW10
Finishing  Sharp Edge / Mirror Surface Finish	CCGT 060202AP	6.35	2.38	2.8	0.2	7°	●	●
	060204AP				0.4		●	●
	CCGT 09T302AP	9.525	3.97	4.4	0.2		●	●
	09T304AP				0.4		●	●
	09T308AP				0.8		●	●
Finishing  Sharp Edge / Mirror Surface Finish	DCGT 070202AP	6.35	2.38	2.8	0.2	7°	●	●
	070204AP				0.4		●	●
	DCGT 11T302AP	9.525	3.97	4.4	0.2		●	●
	11T304AP				0.4		●	●
	11T308AP				0.8		●	●
Finishing  Sharp Edge / Mirror Surface Finish	TPGT 090202AP	5.56	2.38	2.8	0.2	7°	●	●
	090204AP				0.4		●	●
	090208AP				0.8		●	●
	TPGT 110302AP	6.35	3.18	3.3	0.2	11°	●	●
	110304AP				0.4		●	●
	110308AP				0.8		●	●
Finishing  Sharp Edge / Mirror Surface Finish	VCGT 160404AP	9.525	4.76	4.4	0.4	7°	●	●

● : Standard Stock

## Applicable Chipbreaker Range

