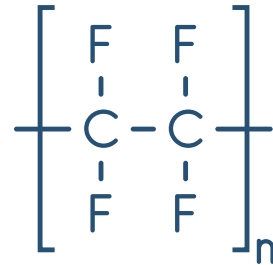
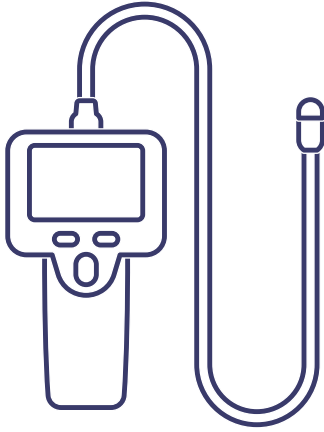


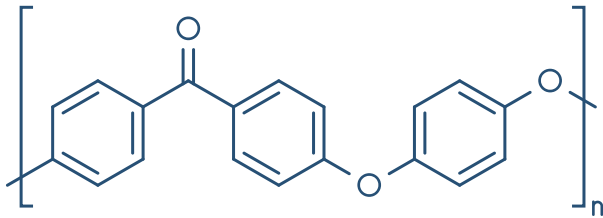
Solution for Machining Plastics

For turning small parts | Y-axis holder + KM1 Insert

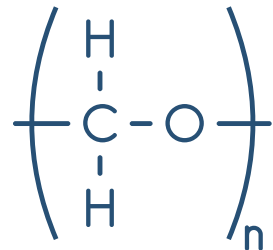
NTK
CUTTING TOOLS



PTFE



PEEK



POM



New Chip Control Proposal for Plastics

The issue can be solved by applying Y-axis machining of Plastics
<PEEK/PTFE> used in medical equipment, implants,
semiconductor equipment components, etc.

Solution for Machining Plastics

For turning small parts | Y-axis holder + KM1 Insert

Solution for Machining Plastics

The Realization of Stable Machining

Improved chip control with a Y-axis holder

High quality surface finish with KM1

Performance

- Applying Y-axis machining eliminates chip control issues.
- Mirror-finish polished fine grain cemented carbide ensures an excellent surface finish

Application Area

Automatic lathe (Gang type) machining plastic materials (PEEK/PTFE, etc.)

Recommended Cutting Conditions

Grade	Material	Operation	Machining	Cutting speed (m/min)	Feed (mm/rev)	DOC (mm)	DRY	AIR
KM1	Plastic (PEEK,PTFE,etc.)	Turning	Roughing - Finishing	50 - 150	0.05 - 0.10	0.5 - 3.0	●	●

Chip Control Performance

Material : PEEK(φ10) Cutting conditions : $v_c=80\text{m/min}$ $f=0.05\text{mm/rev}$ $a_p=1.00\text{mm}$

Machining approach	Standard machining		Y-axis machining	
	Chipbreaker		Chipbreaker	
Machining image	Yes	No	Yes	No

Case Study

Medical implant : PEEK

	NTK	Competitor
Tool	KM1 VCGT11T302H No chipbreaker	Carbide VCGT11T302 Molded chipbreaker
Cutting speed (m/min)	100	
Feed (mm/rev)	0.06	
DOC (mm)	2.50	
Coolant	AIR	DRY
Tool life	80 pcs.	40 pcs.

Automotive component : PEEK (with glass fiber)

	NTK	Competitor
Tool	KM1 DCGT11T302H No chipbreaker	PVD Carbide VNMG160408 Molded chipbreaker
Cutting speed (m/min)	120	40
Feed (mm/rev)	0.08	0.05
DOC (mm)	0.25	
Coolant	AIR	DRY
Tool life	3 pcs.	1 pc.

Lineup

Application types : Front turning (ISO) / Back turning / Grooving / Cut-off / Threading / Boring

Standard holder	<input type="checkbox"/> 7 / 8 / 10 / 12 / 16 / 20 * <input type="checkbox"/> 10~Coolant through available
Y-axis coolant through holder	<input type="checkbox"/> 12 / 16
Boring bar	Minimum machining diameter: Standard holder - from φ1mm * Coolant through holder - from φ2.2mm available

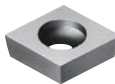
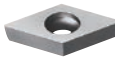
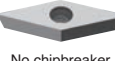
* For details, please refer to the NTK General Catalog or Swiss Tooling Catalog.

Mirror finish

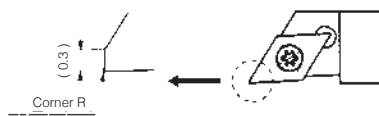
Machining Performance of NTK Carbide

Excellent surface finish using an insert featuring an up-sharp edge and polished mirror-finish for welding resistance.

Insert Lineup

Shape	EDP	Item number	Corner R	Grade	Dimensions (mm)		Remarks
				KM1	IC	Thickness	
 No chipbreaker	5556196	CCGW 060200 H	0.03	●	6.35	2.38	
	5556204	CCGW 060201 H	0.1	●			
	5556212	CCGW 060202 H	0.2	●			
	5556220	CCGW 09T300 H	0.03	●	9.525	3.97	
	5556246	CCGW 09T301 H	0.1	●			
	5556253	CCGW 09T302 H	0.2	●			
 No chipbreaker	5556139	DCGW 070200 H	0.03	●	6.35	2.38	
	5556147	DCGW 070201 H	0.1	●			
	5556154	DCGW 070202 H	0.2	●			
	5556162	DCGW 11T300 H	0.03	●	9.525	3.97	
	5556170	DCGW 11T301 H	0.1	●			
	5556188	DCGW 11T302 H	0.2	●			
	5556295	TFD 07FR05 H	0.05	●	6.35	2.38	with wiper
	5556303	TFD 11FR05 H	0.05	●	9.525	3.97	
 No chipbreaker	5556261	VCGW 110300 H	0.03	●	6.35	3.18	
	5556279	VCGW 110301 H	0.1	●			
	5556287	VCGW 110302 H	0.2	●			

* For details, please refer to the NTK General Catalog or Swiss Tooling Catalog.



Features of TFD type

- * The insert geometry of the TFD-style is the same as a DCGT style.
- * The TFD style insert is designed with a 0.3 mm wiper flat when the insert is set in the holder; enabling improved work surface finish at increased feed rates.
- * The TFD-style inserts can be used on toolholders (SDJC-N, SDJC-N-F, SDJC, CH-SDUC, Y-SDJC, Y-SDJC-OH) with a cutting edge angle of 93°.



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