Solution for Machining Plastics
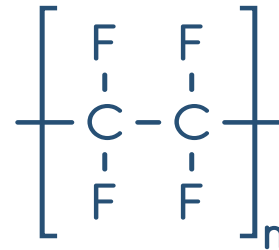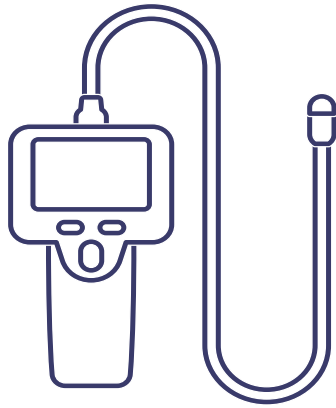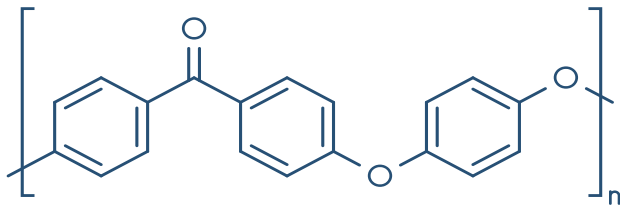
For turning small parts | Y-axis holder + KM1 Insert

NTK
CUTTING TOOLS

PTFE

PEEK

POM

New Machining Process for Chip Control

The issue is solved by applying Y-axis tooling to machine Plastics <PEEK/PTFE> used in medical equipment, implants, semiconductor equipment components, etc.

Solution for Machining Plastics

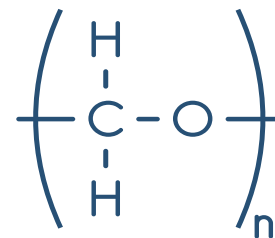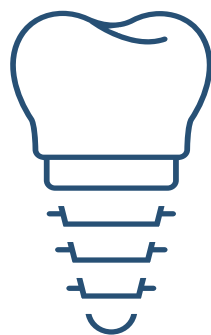**For turning small parts | Y-axis holder + KM1 Insert**

Solution for Machining Plastics
The Realization of Stable Machining

Improved chip control with a Y-axis holder
High quality surface finish with KM1

Mirror finish

| Performance

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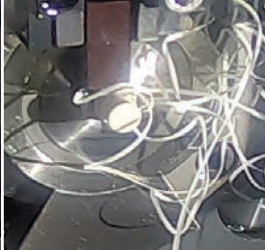
| Application Area

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

| Machining Performance of NTK Carbide

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

| Recommended Cutting Conditions

Grade	Material	Operation	Machining	Cutting speed (SFM)	Feed (IPR)	DOC (inch)	DRY	AIR
KM1	Plastic (PEEK,PTFE,etc.)	Turning	Roughing - Finishing	164 - 490	.002 -.004	.020 - .118	●	●

| Chip Control Performance

Material : PEEK(φ.3937″) Cutting conditions : 267 SFM .002 IPR .039 DOC

Machining approach	Standard machining		Y-axis machining	
Chipbreaker	Yes	No	Yes	No
Machining image				Good! Air helps stabilize chip control

| Case Study

Medical implant : PEEK

	NTK	Competitor
Tool	KM1 VCGW2208H No chipbreaker	Carbide VCGT11T302 Molded chipbreaker
Cutting speed (SFM)	328	
Feed (IPR)	.0023	
DOC (inch)	.010	
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 (SFM)	394	131
Feed (IPR)	.003	.002
DOC (inch)	.010	
Coolant	AIR	DRY
Tool life	3 pcs.	1 pc.

| Tool Lineup

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

Standard holder	Metric: 7 , 8 , 10 , 12 , 16 , 20mm * Coolant through available from 10mm Inch: 3/8 , 1/2 , 5/8 , 3/4inch * Coolant through available from 3/8inch
Y-axis coolant through holder	Metric: 12 , 16 Inch: 3/8 , 1/2 , 5/8
Boring bar	Minimum machining diameter: Standard holder - from φ.039″ * Coolant through holder - from φ.0866″ available

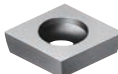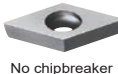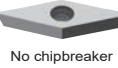* For details, please refer to the NTK General Catalog or Swiss Tooling Catalog.

Y-axis + Air

| Insert Lineup

Shape	EDP	Item number	Corner R	Grade	Dimensions (inch)		Remarks
				KM1	IC	Thickness	
No chipbreaker	5556196	CCGW 21.501 H	.001	●	1/4	3/32	
	5556204	CCGW 21.504 H	.004	●			
	5556212	CCGW 21.508 H	.008	●			
	5556220	CCGW 32.501 H	.001	●	3/8	5/32	
	5556246	CCGW 32.504 H	.004	●			
	5556253	CCGW 32.508 H	.008	●			
No chipbreaker	5556139	DCGW 21.501 H	.001	●	1/4	3/32	
	5556147	DCGW 21.504 H	.004	●			
	5556154	DCGW 21.508 H	.008	●			
	5556162	DCGW 32.501 H	.001	●	3/8	5/32	
	5556170	DCGW 32.504 H	.004	●			
	5556188	DCGW 32.508 H	.008	●			
	5556295	DCGW 21.502RH-WP	.002	●	1/4	3/32	with wiper
	5556303	DCGW 32.502RH-WP	.006	●	3/8	5/32	
No chipbreaker	5556261	VCGW 2201 H	.001	●	1/4	1/8	
	5556279	VCGW 2204 H	.004	●			
	5556287	VCGW 2208 H	.008	●			

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

(.012")

Corner R
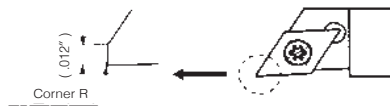
Features of TFD type

* The insert geometry of the TFD-style is the same as a DCGT style.

* The TFD style insert is designed with a 0.012 inch 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°.

NTK CUTTING TOOLS

NTK Cutting Tools USA

46929 Magellan Dr., Wixom, MI 48393 U.S.A.

Official Website

www.ntkcuttingtools.com/us

YouTube Channel

www.youtube.com/NTKCUTTINGTOOLS

LinkedIn

www.linkedin.com/company/ntk-cutting-tools

Instagram

www.instagram.com/ntk_cuttingtools/

Facebook

www.facebook.com/NTKUS

Contact us   ctinfo@ntktech.com

Download on the App Store

NOV 2022 (US)