

NTK Solutions for Machining Specialized Components

Quality and Precision are Key

Operations include: Front turning, Back turning, Grooving, Cut-off, ID, Milling

Firing Pins

Part Materials: 17-4 PH900 stainless steel;
4140, 4340, and 4350 Steels

Recommended grades: ST4, DM4 and QM3

Bolt Carriers

Part Materials: Carpenter 158 (military spec)
9310 and 8620 Alloy steels

Recommended grades: ST4, DM4 and QM3

Bullet Cartridge

Part Materials: Aluminum, Copper, and Brass

Recommended grades: DT4, VM1, and KM1

Barrels

Part Materials: Alloy steels, Stainless steels,
Aluminum, Titanium,
Columbium (heat erosion resistant)

Recommended grades: DM4, ST4, and VM1

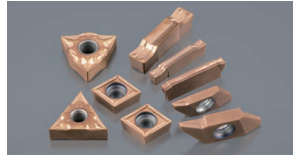
ST4



Coating: Thick CrAlN

- *Best grade for 304SS*
- Excellent adhesion and wear resistance

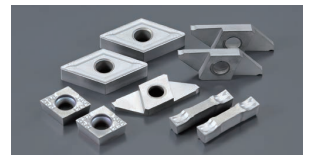
DM4



Coating: Thick TiN-TiCN-TiAlN

- *Best oxidation resistance for high temperature machining*
- *Optimized for Conventional and Swiss-type lathes*

QM3



Coating: Thick TiCN

- Excellent toughness and wear resistance for wide
- Stable interrupted machining of steel

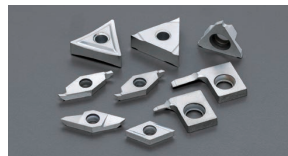
DT4



Coating: Thin TiN-TiCN-TiAlN

- *Excellent oxidation resistance for Swiss-type lathes*

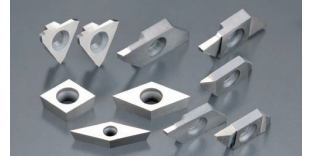
VM1



Coating: Thin TiCN

- Especially for machining free cutting steels (SUM materials)
- High-precision machining with longer tool life even at high-speeds


KM1





Uncoated


- Very sharp cutting edges
- Excellent adhesion resistance because of the mirror-finish
- A wide range of cutting tools in various types available

Case Studies:

Bolt Carrier – Bushmaster AR10	
Material: 9310 Alloy Steel	
	Insert: TFX3304MR ST4
	980 pcs/ corner
	.125" DOC

Barrel - Sig Sauer P226 .40 cal.	
Material: 420 Stainless Steel	
	Insert: CCGT32.51MYL DM4
	400 pcs/ corner
	.080" DOC

Firing Pin – Colt AR15	
Material: 4140 Steel	
	Insert: DCGT32.508MFNAM3 ST4
	1150 pcs/ corner
	.040" DOC

Bullet Cartridge	
Material: Brass	
	Insert: TCGT21.504RS VM1 & ZM3
	4,000 RPM and 20 IPM
	Excellent chip control and less burrs

Small Diameter Indexable End-mill

Swiss CNC Lathe Applications



- Install a .787" (20mm) end mill in a ER16 collet
- Just rotate inserts to index. No need to make any adjustments
- High quality surface finish, as low as 1um (Rz) when using wiper inserts
- Corner radius as small as .002" available on inserts
- In addition to D cut, ramp machining can be performed *

* A combination of single-blade type endmills and inserts with center blade is required

HPC
high performance cutter

series

Traditional CNC Lathe Applications



- Diameters range from ϕ .787" - ϕ 3.937"
- Excellent rigidity with steel cutter body achieves exceptional reliability
- Selection of fixed pocket cutters, so no presetting is required
- Adjustable style insert pockets to set edge height
- Polycrystalline diamond- PD1 grade inserts with edge radius or chamfer
- PVD Coated Carbide - TM1 grade inserts with chipbreaker
- Wiper on all inserts for superior surface finish

Billet Lower Receiver

Part Material: Aluminum 7075 or 6061, Steel and Titanium.

Milling operation recommended grades: PD1 (PCD material), TM1 (coated carbide)



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Tungaloy-NTK USA

3726 N. Ventura Dr., Arlington Heights, IL 60004

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