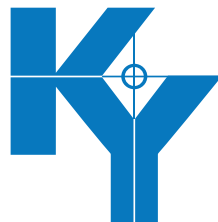


REDEFINING THE EDGE

# ULTRA PRECISION DIAMOND TOOLS

SINGLE FLUTE ENDMILLS  
FOR MICRO-MILLING



DIAMOND

[www.kydiamond.ca](http://www.kydiamond.ca)

Ultra precision Diamond Tools Manufacturer

# OUR UNMATCHED CAPABILITIES, YOUR ADVANTAGE

Single crystal diamond endmills used in conjunction with ultraprecision CNC machines are used to manufacture small-scale, high aspect ratio optical elements or mold inserts. These tools can be used for non-ferrous metals, alloys, plastics and crystals.

**Metals/Alloys:** Cu, NiP (>10% P), Al, CuZn (Brass), CuSn(Bronze), CuNi, Sn, Moldmax®

**Plastics:** Acrylic, Zeonex/Zeonor, Polystyrene, Polycarbonate, Isoplast, Topas, Suncolor, Ultem

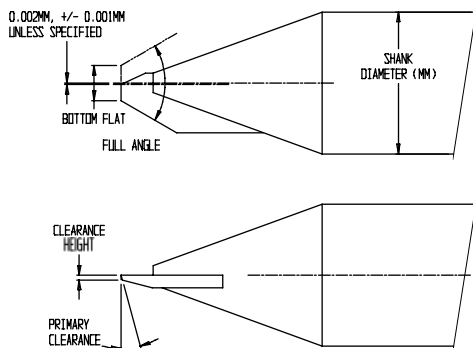
**Crystals:** Si, Ge, ZnS, ZnSe, CaF, InSb, GaAs, LiNb

K&Y Diamond uses ultra-precision CNC machines for shaping the highest accuracy cutting edges on diamond. This also enables a multitude of high accuracy shapes including spherical ball, ellipse, toroid, cone (sharp point or flat bottom), cylinder or custom facet. Multi-radii cutting edges are now also possible.

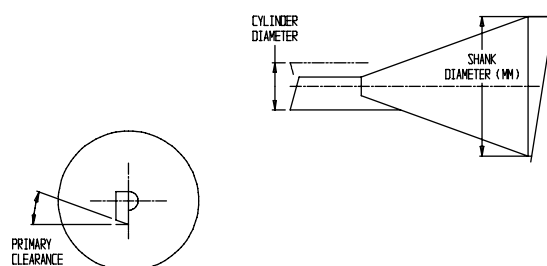
## PART NUMBER SELECTION TABLE

	MEM	C3	R050m	90	L	E	C
<b>TYPE OF DIAMOND</b>	NEM Natural MEM Synthetic						
<b>WAVINESS</b>		N $\leq 2.00\mu\text{m}$ C1 $\leq 1.00\mu\text{m}$ C2 $\leq 0.50\mu\text{m}$ C3 $\leq 0.25\mu\text{m}$					
<b>SHAPE</b>			C Cone D Cylinder R Radius				
			Cone Full Angle <b>XX°</b>				
			Cylinder Diameter <b>X.XXm in mm</b>				
			Radius Size <b>X.XXm in mm</b>				
<b>SWEEP ANGLE</b>			XX° OR Cone Bottom .XXX in mm				
<b>RAKE ANGLE</b>				L 0° M -3° N -5° R -10°			
<b>PRIMARY CLEARANCE</b>					B 30° C 25° D 20° E 15° F 12° G 10°		
<b>TYPE OF CLEARANCE</b>						C = Conical _ = Cylindrical	

### CONICAL MILL



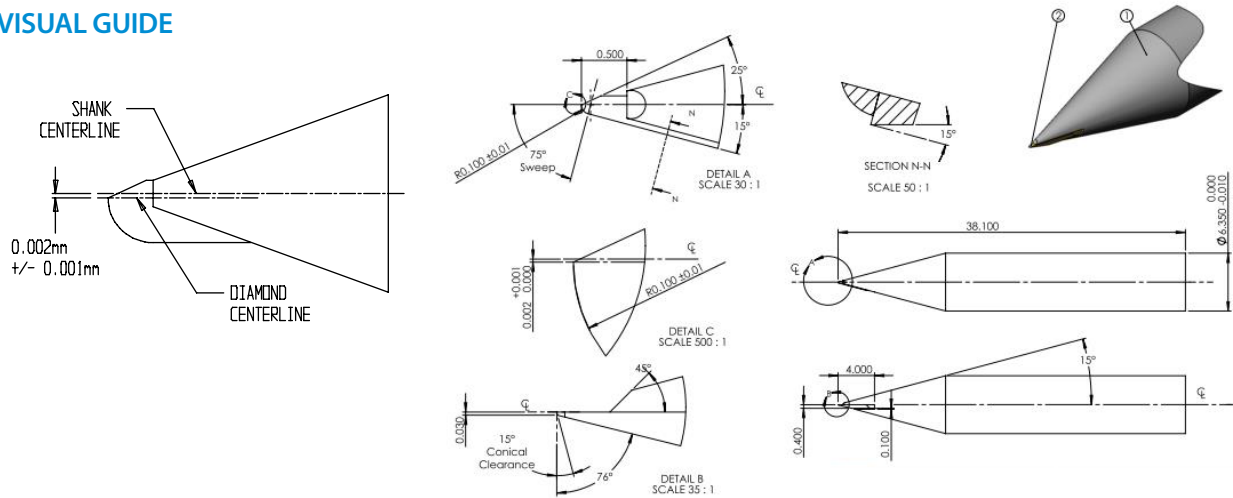
### SIDE AND END CUTTING CYLINDER



# PRECISELY THE TOOL YOU NEED

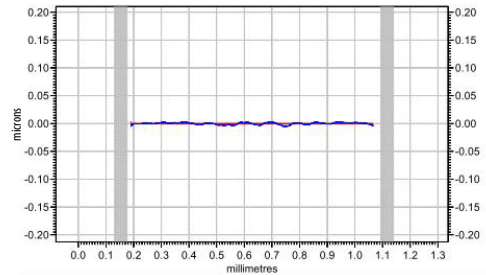
K&Y Diamond's state of the art manufacturing, metrology and assembly techniques provide unique capabilities for shaping diamond into complex shapes with unsurpassed placement accuracy.

## VISUAL GUIDE

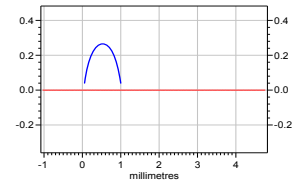


<b>03</b>	<b>C</b>	<b>635</b>	<b>50M</b>
<b>CLEARANCE WIDTH</b> X.XXm in mm	<b>SHANK MATERIAL</b> C Carbide S Tool Steel M Metal Matrix	<b>SHANK DIAMETER</b> X.XXm in mm	<b>LENGTH</b> XX in mm

## WAVINESS MEASUREMENT

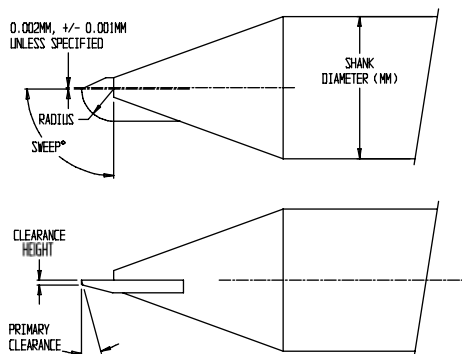


Radius 0.5164 mm  
 Pln 0.8750 mm  
 Pv 0.0052 μm  
 Pp 0.0028 μm



Tolerance  
 Pt 0.0079 μm

## BALL RADIUS MILL



FEATURE	K&Y CAPABILITY
End Mill Radius	0.025mm to 2.0mm
Waviness	<10nm P/V over 90°
Diamond alignment	±0.001mm from cylindrical shank centerline
Cutting profile	Spherical ball, ellipse, cone, cylinder, Multi-radius
Sweep angle	20° - 90°
Shank Diameter	3mm - 12mm
Shank Material	Tool Steel, Carbide

# STATE OF THE ART LABORATORY



## TOOL REPAIR/RELAP

We are aware of the importance of getting your tools back from repair as soon as possible, and our experienced and dedicated team ensures that the process is flawless and quick. When your repaired tools are shipped back to you, they will perform as new.

We are grateful for all of our loyal customers and look forward to meeting your needs and expectations as we continue redefining the edge!

### **K&Y Diamond**

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Dollard-des-Ormeaux, QC, H9B 2M9  
CANADA

[sales@kydiamond.ca](mailto:sales@kydiamond.ca)

T.: 514 676 0640

F.: 514 676 0645

USA Customers, please send all tools for repair to:

### **NFI Industries**

c/o K&Y Diamond Ltd.  
2002 Ridge Road  
Champlain, NY, USA 12919