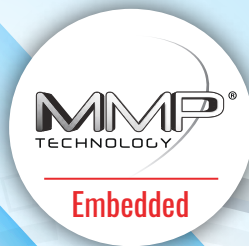


# NexGen

## High Precision Milling Tools $\geq \phi 30 \mu$





**AXIS**

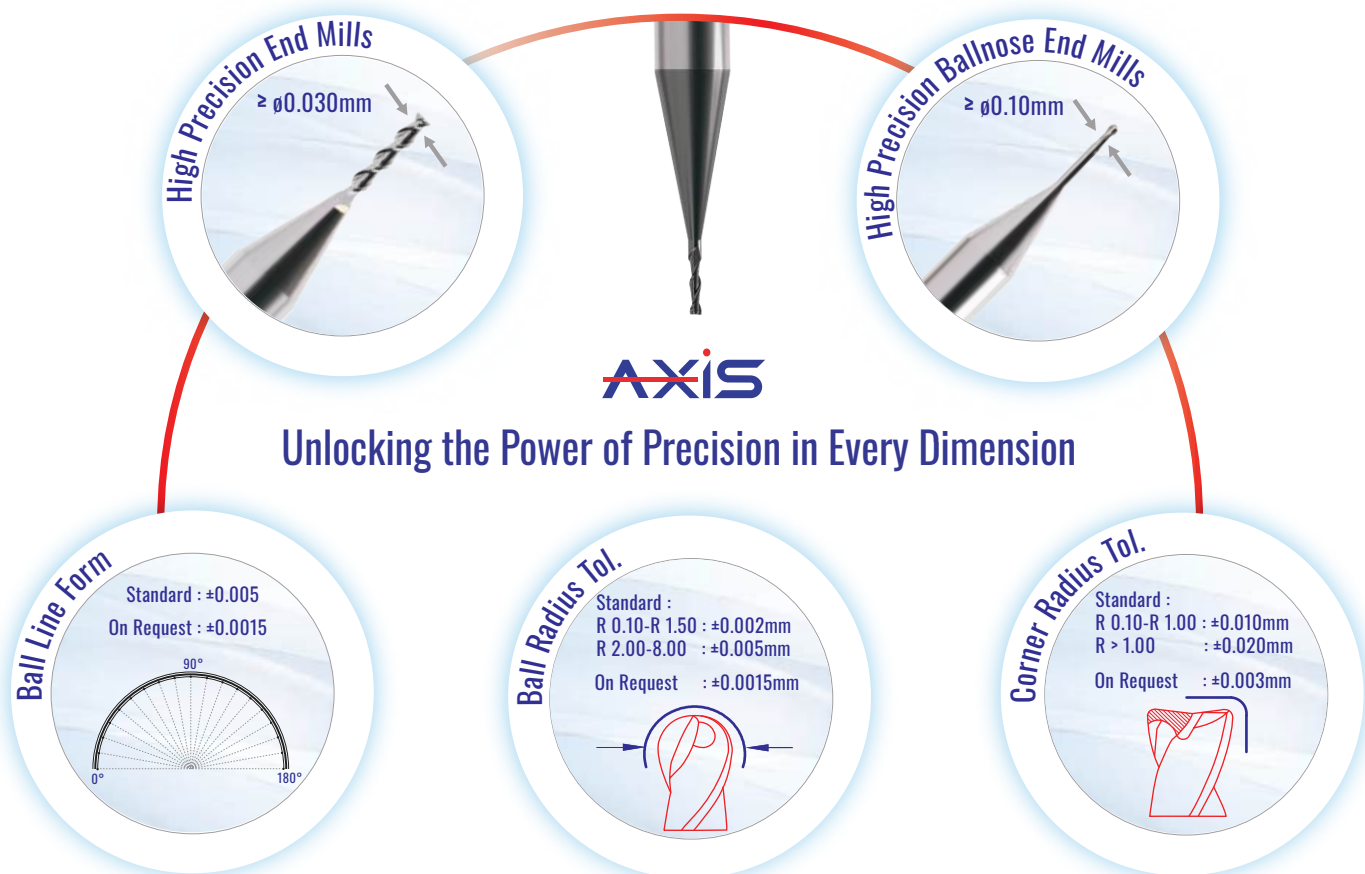
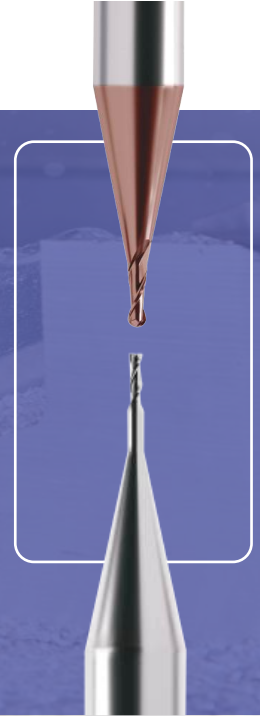
Long-Standing Experience in **m**ICRO Tools

# NexGen High Precision Milling Tools

In modern manufacturing, high precision milling tools are crucial for achieving tight tolerances and superior surface finishes. These tools are indispensable in industries where accuracy and quality are paramount, such as Aerospace, Medical, Automotive, and Mold making.

However advancement in tool geometries and thin film coatings, increasingly accurate tool holders, continuously evolving machine tools and advancement in crafting precise CAM tool paths have enabled cutting hardened materials with high accuracy and productivity.

With our experience of decades crafting high precision tools aided with technology to stabilize the cutting edge and impart high hardness to the tool bring a basket of niche product offering for mICRO and Macro mACHINING.



## NexGen Coatings

Continuously evolving markets, applications and materials place high demands on precision machining Tools. Our in-house NexGen Coatings (CVD and PVD) facility allows us to offer High-Performance Tools tailored for emerging applications.

With advanced in-house preparation and post-coating processes, we ensure the best foundation for optimal Coating productivity and superior part finishes. Our proprietary engineered mICRO geometries further set our tools apart, making them a class above the rest.



# Unleash Superior Performance with **HiPIMS Coating**

**PVD**

**HiPIMS\***

**HiPIMS** High Power Impulse Magnetron Sputtering  
**Denser | Smoother | Harder**

Coatings for Better Machining Outcomes and Longer Tool Life

HiPIMS is an advanced evolution of DC sputtering technology, offering significantly enhanced performance. The process generates a high-energy plasma that achieves unprecedented levels of material ionization. This results in a high flux of ionized particles, which in turn forms an exceptionally dense and nearly fully amorphous coating structure, providing superior coating quality and durability compared to traditional methods

## HiPIMS Coatings Benefits

Emphasize its  
Excellent Hardness

Exceptional  
Adhesion

Enhanced  
Wear Resistance

Extended  
Tool Life

HiPIMS Coating reduces downtime and maintenance costs, contributing to overall cost-efficiency and productivity

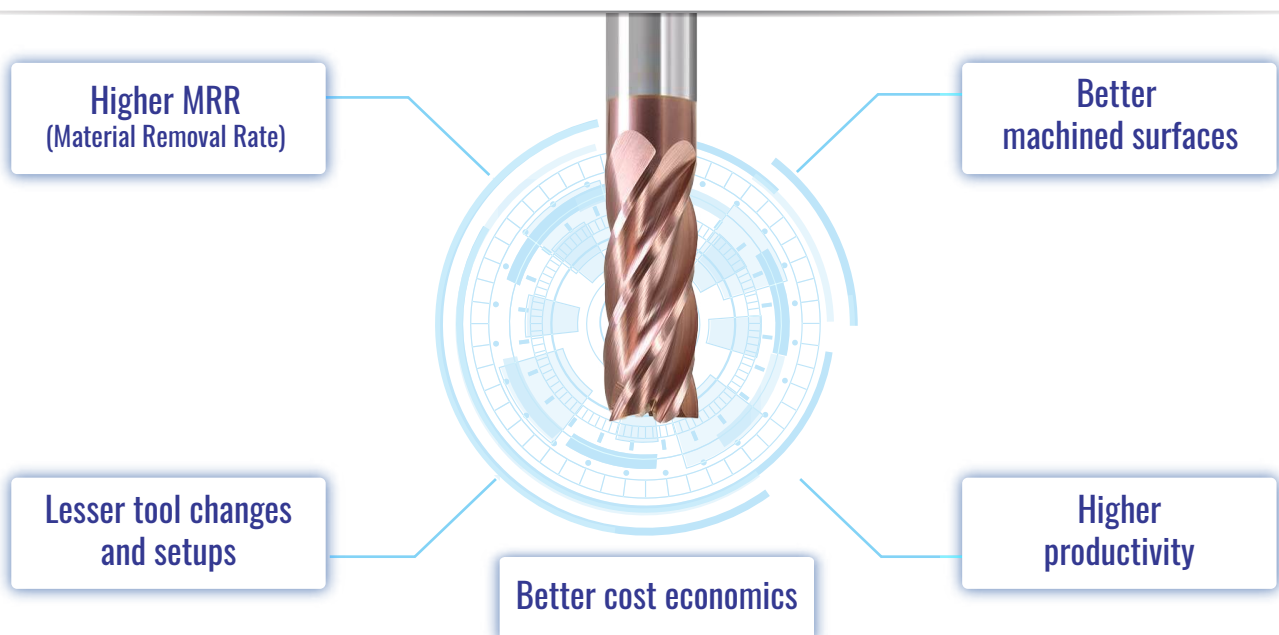
# Achieve Unmatched Surface Quality and Performance with **MMP Superfinishing**



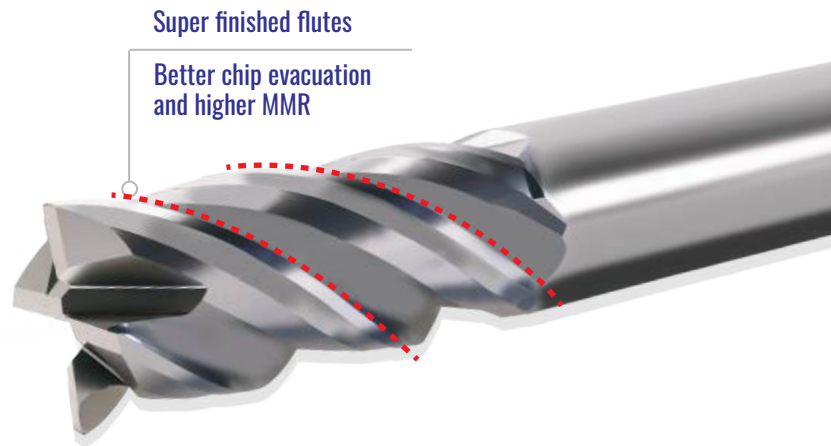
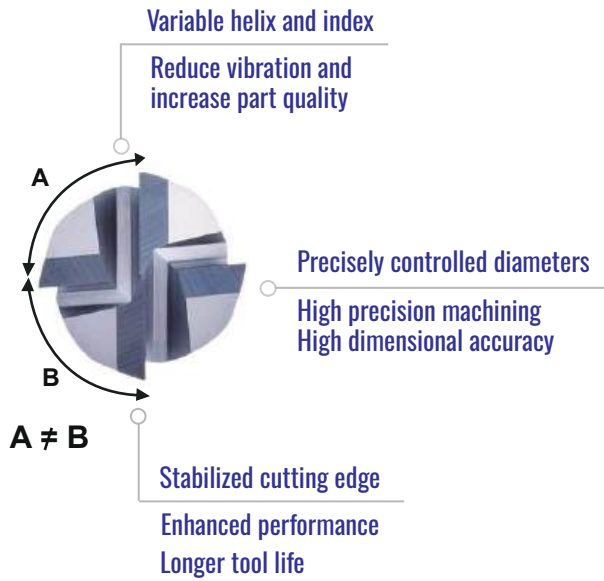
MMP (Micro Machining Process) superfinishing, which achieves an ultra-smooth surface finish

MMP Superfinishing maps and characterises surface roughness into different frequency ranges and filters them to deliver application specific surface objectives, with a degree of precision that is unique and unmatched in the market. Such consistent and high level of surface characterisation and calibration and stabilisation of the cutting edges elevates the tools performance to the next level in high precision and micro machining applications.





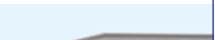
## MMP Superfinishing Benefits



MMP Superfinishing process enhances tool longevity and ensures consistent performance over time, improving the quality of the final product

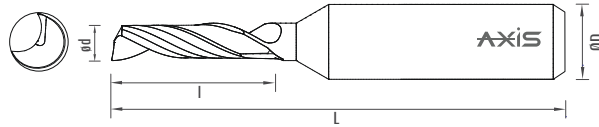


### ~~AXIS~~ Portfolio

Series	Dia range (mm)	Description	Application	Tool Image
E823-SN	0.10 -12.00	Single Flute End Mills	Design and geometry tailored for Non ferrous materials such as Aluminium and Plastic	
E305-SN	1.00 -12.00	High Performance End Mills	Geometry designed for milling of Steel, Stainless Steel, Titanium and Nickle Alloys	
E307-SN	1.00 -12.00	High Performance End Mills	Geometry designed for milling of Steel, Stainless Steel, Titanium and Exotic materials	
E310-SN	1.00 -12.00	High Performance Square End Mills	Versatile geometry for side, slot and surface milling of variety of materials such as Steel, Cast Iron and Non Ferrous materials	
E966-SN	0.05 -6.00	2 Flute End Mills	Versatile geometry for side, slot and surface milling of variety of materials such as Cast Iron, steel, Non-ferrous and Titanium	
E967-SN	0.20 -6.00	4 Flute End Mills	Versatile geometry for side, slot and surface milling of variety of materials such as Stainless Steel, Titanium and its Alloys	
E968-SN	1.00 -6.00	3 Flute End Mills	Versatile geometry for side, slot and surface milling of variety of materials such as Cast Iron, Steel, Non-ferrous and Titanium	
B970-SN B870-SN	0.20 -6.00	2 Flute Ballnose End Mills	Geometry suitable for profile milling of variety of materials like Cast Iron, Steel, Stainless Steel, Non-ferrous, Titanium and Nickle Alloys	
B972-SN	0.20 -6.00	4 Flute Ballnose End Mills	Geometry suitable for profile milling of variety of materials like Cast Iron, Steel, Stainless Steel, Non-ferrous, Titanium and Nickle Alloys	
G847-SN	0.05 -0.20	Engravers	Precisely controlled tip angles and tip diameters for high precision machining requirements	

## Single Flute End Mills

**E823-SN**



Design and geometry tailored for Non ferrous materials such as Aluminium and Plastic

High rake angles with sharp cutting edges for better and smooth cutting

Highly polished flutes for better and faster chip evacuation

Design to enable wider flute space for improved chip evacuation

High performance ultra fine carbide substrate developed specifically for mICRO machining applications

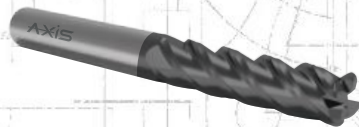
ød h6	l	L	ØD h6
0.10	0.3	38	3.00
0.20	0.6	38	3.00
0.30	1.0	38	3.00
0.40	1.0	38	3.00
0.50	1.5	38	3.00
0.60	3.0	38	3.00
0.70	4.0	38	3.00
0.80	5.0	38	3.00
1.00	5.0	38	3.00
1.20	5.0	38	3.00
1.50	5.0	38	3.00
1.50	5.0	50	6.00
2.00	10.0	38	3.00
2.00	6.0	50	6.00
2.50	10.0	38	3.00
3.00	11.0	50	6.00
3.00	22.0	50	6.00
4.00	14.0	50	6.00
5.00	22.0	50	6.00
6.00	22.0	50	6.00
8.00	25.0	75	8.00
10.00	32.0	75	10.00
12.00	32.0	75	12.00

World of mICRO Tools



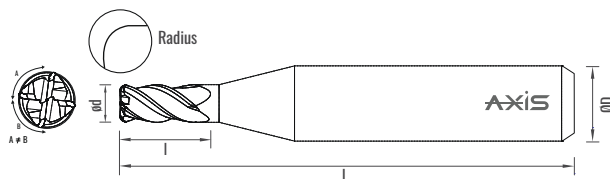
[www.axis-microtools.com](http://www.axis-microtools.com)

# High Performance End Mills E305-SN



## Dia Tolerance

$\phi d \leq 6.00$  - 0.020mm  
 $\phi d > 6.00$  - 0.030mm



Geometry designed for milling of Steel, Stainless Steel, Titanium and Nickel Alloys

Precisely controlled tool features for high precision machining requirements

Variable helix and indexing ensure vibration free machining and smooth surface at higher feed

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

Finely honed cutting edge and highly polished flutes by MMP Superfinishing process for superior edge strength, chip evacuation, better coating adhesion and longer tool life

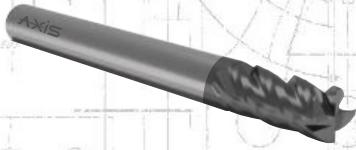
$\phi d$ h10	L	l1	L	$\phi D$ h6	Z	R
1.00	3.0	-	45	6.00	3	0.20
2.00	5.0					
3.00	8.0	-	50	6.00	4	0.20
3.00						0.30
4.00	10.0	-	50	6.00	4	0.20
4.00						0.30
5.00	13.0	-	60	6.00	4	0.50
5.00						1.00
6.00	15.0	-	60	6.00	4	0.50
6.00						1.00
8.00	19.0	22.0	65	8.00	4	0.50
8.00						1.00
8.00						2.00
10.00	24.0	27.0	72	10.00	4	0.50
10.00						1.00
10.00						2.00
12.00	28.0	33.0	83	12.00	4	0.50
12.00						1.00
12.00						2.00

## World of mICRO Tools



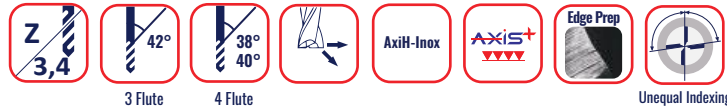
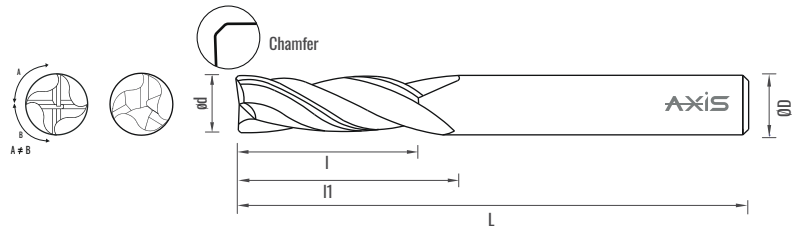
[www.axis-microtools.com](http://www.axis-microtools.com)

# High Performance End Mills E307-SN



## Dia Tolerance

$\phi d \leq 6.00$  - 0.020mm  
 $\phi d > 6.00$  - 0.030mm



Geometry designed for milling of Steel, Stainless Steel, Titanium and Exotic materials

Precisely controlled tool features for high precision machining requirements

Variable helix and indexing ensure vibration free machining and smooth surface at higher feed

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

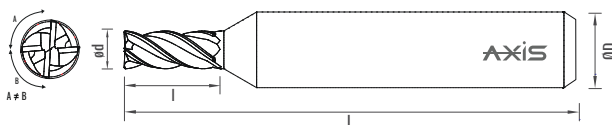
Finely honed cutting edge and highly polished flutes by MMP Superfinishing process for superior edge strength, chip evacuation, better coating adhesion and longer tool life

ød h10	l	l1	L	ØD h5	Z	Chamfer
1.00	3.0	-	45	6.00	3	0.02
1.50	4.0					
2.00	5.0					
2.50	7.0					
3.00	8.0	-	50	6.00	4	0.03
4.00	10.0					
5.00	13.0	-	60	6.00	4	0.05
6.00	15.0					0.10
8.00	19.0	22.0	65	8.00	4	0.10
10.00	24.0	27.0	72	10.00		
12.00	28.0	33.0	83	12.00		

QUALITY  
PRECISION  
CONSISTENCY  
PEOPLE

# High Performance Square End Mills

## E310-SN



Versatile geometry for side, slot and surface milling of variety of materials such as Steel, Cast Iron and Non Ferrous materials

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Variable helix and indexing ensure vibration free machining and smooth surface at higher feed

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

Finely honed cutting edge and highly polished flutes by MMP Superfinishing process for superior edge strength, chip evacuation, better coating adhesion and longer tool life

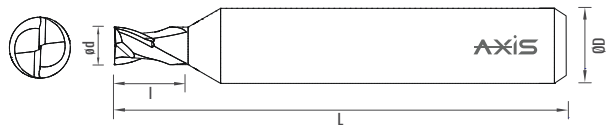
Ød h10	l	L	ØD h6	Z
1.00	3.0	45	6.00	3
1.50	4.0	45	6.00	3
2.00	5.0	45	6.00	3
2.50	7.0	45	6.00	3
3.00	8.0	50	6.00	4
4.00	10.0	50	6.00	4
6.00	15.0	60	6.00	4
8.00	20.0	65	8.00	4
10.00	24.0	72	10.00	4
12.00	28.0	80	12.00	4

World of mICRO Tools



[www.axis-microtools.com](http://www.axis-microtools.com)

## 2 Flute End Mills E966-SN



Versatile geometry for side, slot and surface milling of variety of materials such as Cast Iron, Steel, Non-ferrous and Titanium

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Broad portfolio starting from Ø0.050mm and available in 2D and 3D cutting lengths

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

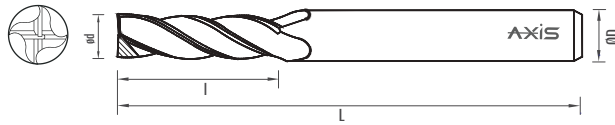
Next Gen coatings suitable for the application material

Proprietary pre and post coating MMP Superfinishing for enhanced coating productivity

Ød h10	l	L	ØD h6
0.05	0.1	38	3.00
	0.15		
0.08	0.15	38	3.00
	0.25		
0.10	0.2	38	3.00
	0.3		
0.20	0.4	38	3.00
	0.6		
0.30	0.6	38	3.00
	0.9		
0.40	0.8	38	3.00
	1.2		
0.50	1.0	38	3.00
	1.5		
0.60	1.2	38	3.00
	1.8		
0.70	1.4	38	3.00
	2.1		
0.80	1.6	38	3.00
	2.4		
0.90	1.8	38	3.00
	2.7		
1.00	2.0	38	3.00
	3.0		
1.20	2.4	38	3.00
	3.6		
1.40	2.8	38	3.00
	4.2		
1.50	3.0	38	3.00
	4.5		
1.60	3.2	38	3.00
	4.8		
1.80	3.6	38	3.00
	5.4		
2.00	4.0	38	3.00
	6.0		
2.50	5.0	38	3.00
	7.5		
3.00	6.0	50	6.00
	9.0		
4.00	8.0	50	6.00
	12.0		
5.00	10.0	50	6.00
	15.0		
6.00	12.0	50	6.00
	18.0		

QUALITY  
PRECISION  
CONSISTENCY  
PEOPLE

## 4 Flute End Mills E967-SN



Versatile geometry for side, slot and surface milling of variety of materials such as Cast Iron, Steel, Non-ferrous and Titanium

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Broad portfolio starting from Ø0.050mm and available in 2D and 3D cutting lengths

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

Next Gen coatings suitable for the application material

Proprietary pre and post coating MMP Superfinishing for enhanced coating productivity

ød h10	l	L	ØD h6
0.20	0.4	38	3.00
	0.6		
0.30	0.6	38	3.00
	0.9		
0.40	0.8	38	3.00
	1.2		
0.50	1.0	38	3.00
	1.5		
0.60	1.2	38	3.00
	1.8		
0.70	1.4	38	3.00
	2.1		
0.80	1.6	38	3.00
	2.4		
0.90	1.8	38	3.00
	2.7		
1.00	3.0	38	3.00
	5.0		
1.20	3.6	38	3.00
	6.0		
1.40	4.2	38	3.00
	7.0		
1.50	4.5	38	3.00
	7.5		
1.60	4.8	38	3.00
	8.0		
1.80	5.4	38	3.00
	9.0		
2.00	6.0	38	3.00
	10.0		
2.50	7.5	38	3.00
	10.0		
3.00	9.0	50	6.00
	12.0		
4.00	12.0	50	6.00
	16.0		
5.00	10.0	50	6.00
	15.0		
6.00	12.0	50	6.00
	18.0		

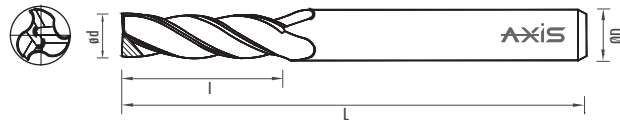
World of mICRO Tools



[www.axis-microtools.com](http://www.axis-microtools.com)

## 3 Flute End Mills

**E968-SN**



Versatile geometry for side, slot and surface milling of variety of materials such as Cast Iron, Steel, Non-ferrous and Titanium

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Broad portfolio starting from Ø1.00mm and available in 2D to 5D cutting lengths

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

Next Gen coatings suitable for the application material

Proprietary pre and post coating MMP Superfinishing for enhanced coating productivity

ød h10	l	L	ØD h6
1.00	3.0	38	3.00
	5.0		
1.20	3.6	38	3.00
	6.0		
1.40	4.2	38	3.00
	7.0		
1.50	4.5	38	3.00
	7.5		
1.60	4.8	38	3.00
	8.0		
1.80	5.4	38	3.00
	9.0		
2.00	6.0	38	3.00
	10.0		
2.50	7.5	38	3.00
	10.0		
3.00	9.0	50	6.00
	12.0		
4.00	12.0	50	6.00
	16.0		
5.00	10.0	50	6.00
	15.0		
6.00	12.0	50	6.00
	18.0		

QUALITY  
PRECISION  
CONSISTENCY  
PEOPLE

## 2 Flute Ballnose End Mills

**B970-SN**

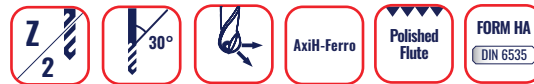
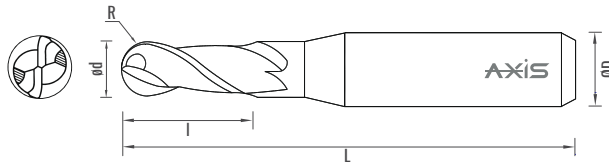
**B870-SN** On Request



### Ball Radius Tolerance

B970 :  $\pm 0.005$  (R 0.10 - R 1.50)  
 $\pm 0.010$  (R 2.00 - R 3.00)

B870 :  $\pm 0.003$  (R 0.10 - R 1.50)  
 $\pm 0.005$  (R 2.00 - R 3.00)



B870

Geometry suitable for profile milling of variety of materials like Cast Iron, Steel, Stainless Steel, Non-ferrous, Titanium and Nickel Alloys

Precisely controlled tool features for high precision machining requirements

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Precisely controlled ball radii and line form

High performance ultra fine carbide substrate developed specifically for micro tooling applications

Next Gen coatings suitable for the application material

Proprietary pre and post coating MMP Superfinishing for enhanced coating productivity

R	ød h10	I	L	ØD h6
0.10	0.20	0.2	38	3.00
		0.4		
0.15	0.30	0.3	38	3.00
		0.6		
0.20	0.40	0.4	38	3.00
		0.8		
0.25	0.50	0.5	38	3.00
		1.0		
0.30	0.60	0.6	38	3.00
		1.2		
0.35	0.70	0.7	38	3.00
		1.4		
0.40	0.80	0.8	38	3.00
		1.6		
0.45	0.90	0.9	38	3.00
		1.8		
0.50	1.00	1.0	38	3.00
		2.0		
0.60	1.20	2.4	38	3.00
		3.6		
0.70	1.40	2.8	38	3.00
		4.2		
0.75	1.50	3.0	38	3.00
		4.5		
0.80	1.60	3.2	38	3.00
		4.8		
0.90	1.80	3.6	38	3.00
		5.4		
1.00	2.00	4.0	38	3.00
		6.0		
1.25	2.50	5.0	38	3.00
		7.5		
1.50	3.00	6.0	50	6.00
		9.0		
2.00	4.00	8.0	50	6.00
		12.0		
2.50	5.00	10.0	50	6.00
		15.0		
3.00	6.00	12.0	50	6.00
		18.0		

### World of micro Tools



[www.axis-microtools.com](http://www.axis-microtools.com)

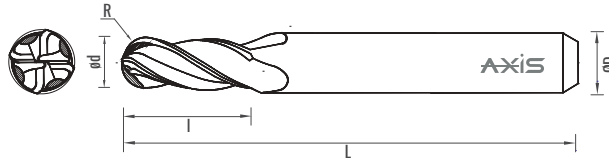
# 4 Flute Ballnose End Mills B972-SN



## Ball Radius Tolerance

B970 :  $\pm 0.005$  (R 0.10 - R 1.50)  
 $\pm 0.010$  (R 2.00 - R 3.00)

B870 :  $\pm 0.003$  (R 0.10 - R 1.50)  
 $\pm 0.005$  (R 2.00 - R 3.00)



Geometry suitable for profile milling of variety of materials like Cast Iron, Steel, Stainless Steel, Non-ferrous, Titanium and Nickel Alloys

Precisely controlled tool features for high precision machining requirements

Centre cutting geometry with advanced features for extended tool life, reduced chatter and improved part quality

Precisely controlled ball radii and line form

High performance ultra fine carbide substrate developed specifically for micro tooling applications

Next Gen coatings suitable for the application material

Proprietary pre and post coating MMP Superfinishing for enhanced coating productivity

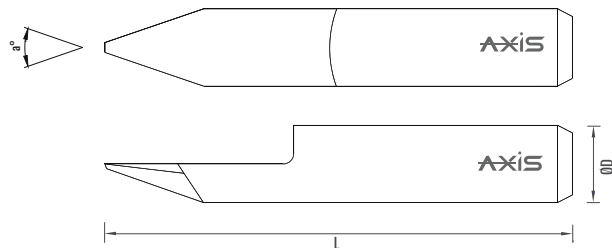
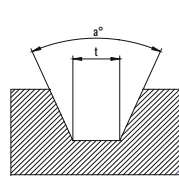
R	ød h10	l	L	ØD h6
0.10	0.20	0.2	38	3.00
		0.6		
0.15	0.30	0.3	38	3.00
		0.9		
0.20	0.40	0.8	38	3.00
		1.2		
0.25	0.50	1.0	38	3.00
		1.5		
0.30	0.60	1.2	38	3.00
		1.8		
0.35	0.70	1.4	38	3.00
		2.1		
0.40	0.80	1.6	38	3.00
		2.4		
0.45	0.90	1.8	38	3.00
		2.7		
0.50	1.00	3.0	38	3.00
		5.0		
0.60	1.20	3.6	38	3.00
		6.0		
0.70	1.40	4.2	38	3.00
		7.0		
0.75	1.50	4.5	38	3.00
		7.5		
0.80	1.60	4.8	38	3.00
		8.0		
0.90	1.80	5.4	38	3.00
		9.0		
1.00	2.00	6.0	38	3.00
		10.0		
1.25	2.50	7.5	38	3.00
		10.0		
1.50	3.00	9.0	50	6.00
		12.0		
2.00	4.00	12.0	50	6.00
		16.0		
2.50	5.00	10.0	50	6.00
		15.0		
3.00	6.00	12.0	50	6.00
		18.0		

QUALITY  
PRECISION  
CONSISTENCY  
PEOPLE

# Engravers G847-SN



**On Request**  
ultra mICRO tip dia  $\geq 0.020\text{mm}$   
Customised tip radius



Precisely controlled tip angles and tip diameters for high precision machining requirements

Sharp cutting edges to ensure burr free engraving

High performance ultra fine carbide substrate developed specifically for mICRO tooling applications

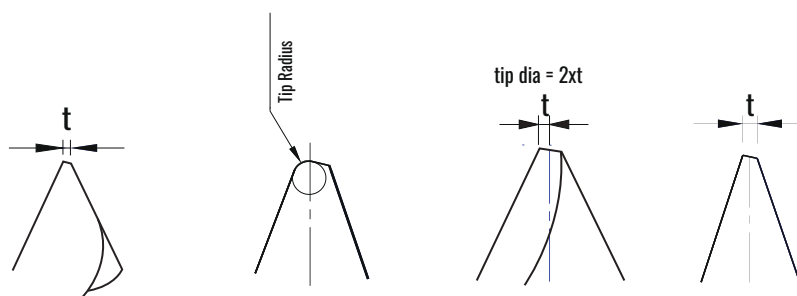
Next Gen coatings suitable for the application material

$\phi d$	L	OD h6	Angle a			
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0.10						
0.20						
0.05	38	3.00	30°	45°	60°	90°
0.10						
0.20						
0.05	38	3.175	30°	45°	60°	90°
0.10						
0.20						
0.05	50	4.00	30°	45°	60°	90°
0.10						
0.20						
0.05	50	5.00	30°	45°	60°	90°
0.10						
0.20						
0.05	50	6.00	30°	45°	60°	90°
0.10						
0.20						
0.05	50	8.00	30°	45°	60°	90°
0.10						
0.20						




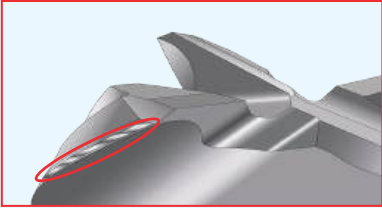
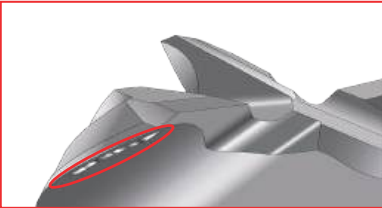
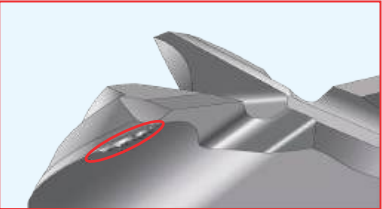

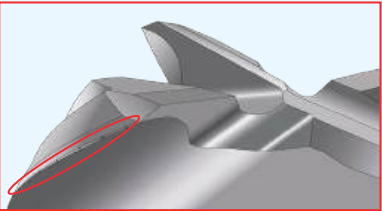
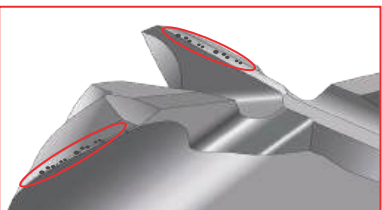
## World of mICRO Tools






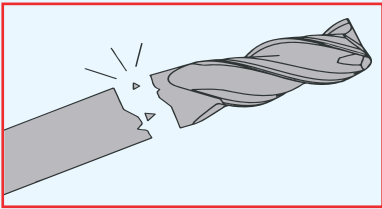
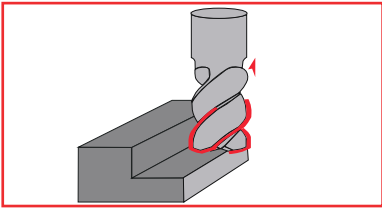
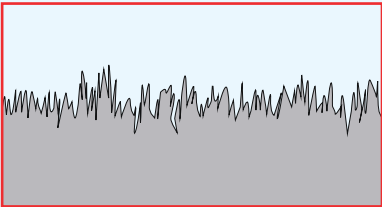
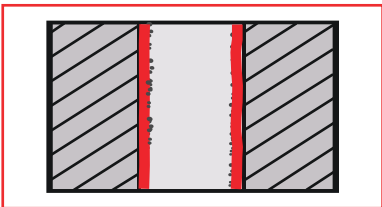
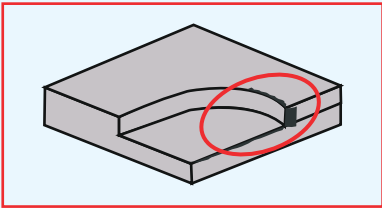
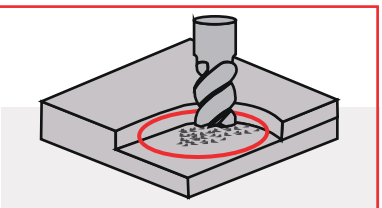
[www.axis-microtools.com](http://www.axis-microtools.com)



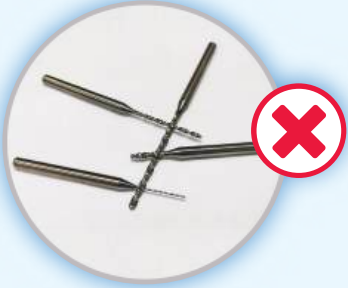
# Troubleshooting for End Mills

 <b>Problem</b>	 <b>Cause</b>	 <b>Solution</b>
<b>Flank Wear</b> 	<ul style="list-style-type: none"> <li>High cutting speed</li> <li>Carbide grade is too soft</li> <li>Non coated End Mill</li> <li>Less number of flutes</li> </ul>	<ul style="list-style-type: none"> <li>Reduce the cutting speed</li> <li>Use harder grade</li> <li>Use coated End Mill</li> <li>Increase the No. of flutes</li> </ul>
<b>Crater Wear</b> 	<ul style="list-style-type: none"> <li>Excessive cutting temperatures</li> <li>Feed too high</li> <li>Cutting speed too high</li> <li>Carbide grade is too soft</li> </ul>	<ul style="list-style-type: none"> <li>Using appropriate coolant during machining</li> <li>Reduce feed</li> <li>Reduce cutting speed</li> <li>Use harder grade</li> </ul>
<b>Built Up Edge</b> 	<ul style="list-style-type: none"> <li>Cutting zone temperature is low</li> <li>Negative cutting geometry</li> <li>Caused by chemical reaction between tool and workpiece</li> </ul>	<ul style="list-style-type: none"> <li>Increase cutting speed</li> <li>Use positive rake geometry</li> <li>Improve lubricant with higher oil content for additives</li> </ul>
<b>Corner Fracture</b> 	<ul style="list-style-type: none"> <li>The grade is too soft</li> <li>Cutting speed too high</li> </ul>	<ul style="list-style-type: none"> <li>Use tougher grade</li> <li>Reduce cutting speed</li> </ul>
<b>Thermal Cracking</b> 	<ul style="list-style-type: none"> <li>Variations in cutting temperature</li> <li>Inconsistent coolant supply</li> <li>Less Concentration of coolant</li> </ul>	<ul style="list-style-type: none"> <li>Increase coolant pressure/volume</li> <li>Continuous supply of Coolant</li> <li>Increase oil concentration percentage</li> </ul>
<b>Edge Chipping</b> 	<ul style="list-style-type: none"> <li>Feed rate is too high</li> <li>Larger depth of cut</li> <li>High spindle run out</li> <li>Low clamping rigidity</li> </ul>	<ul style="list-style-type: none"> <li>Reduce feed rate</li> <li>Decrease axial or radial depth of cut</li> <li>Check spindle run out and minimize</li> <li>Shorten the tool overhang. Check the spindle and collet run out. Increase chuck clamping power. Increase work clamping rigidity.</li> </ul>

# Troubleshooting for End Mills

 <b>Problem</b>	 <b>Cause</b>	 <b>Solution</b>
<b>Tool Breakage</b> 	<ul style="list-style-type: none"> <li>High depth of cut</li> <li>Low End Mill rigidity</li> <li>Longer overhang</li> <li>Chip jamming</li> <li>Chip load per tooth too high</li> </ul>	<ul style="list-style-type: none"> <li>Decrease depth of cut</li> <li>Increase tool diameter. Improve rigidity</li> <li>Shorten the overhang of tool</li> <li>Wider chip pocket</li> <li>Reduce the chip load</li> </ul>
<b>Vibrations During Cutting</b> 	<ul style="list-style-type: none"> <li>Improper cutting conditions</li> <li>Low End Mill rigidity</li> <li>Low clamping rigidity</li> </ul>	<ul style="list-style-type: none"> <li>Decrease cutting speed and feed</li> <li>Increase the helix angle, No. of flutes and tool diameters</li> <li>Shorten the tool overhang. Check the spindle and collet run out. Increase chuck clamping power. Increase work clamping rigidity</li> </ul>
<b>Poor Surface Finish</b> 	<ul style="list-style-type: none"> <li>Larger cutting edge wear</li> <li>Improper cutting conditions</li> <li>Chip packing</li> </ul>	<ul style="list-style-type: none"> <li>Use Coated tool</li> <li>Decrease depth of cut and cutting speed</li> <li>Use air blow. Increase coolant quantity</li> </ul>
<b>Burr or Chipping Occurs</b> 	<ul style="list-style-type: none"> <li>High depth of cut</li> <li>Large helix angles</li> </ul>	<ul style="list-style-type: none"> <li>Decrease depth of cut and feed</li> <li>Decrease helix angle</li> </ul>
<b>Quick Burr Formation</b> 	<ul style="list-style-type: none"> <li>Notch wear</li> <li>High cutting parameters</li> </ul>	<ul style="list-style-type: none"> <li>Use Coated tool</li> <li>Decrease cutting speed and increase feed</li> </ul>
<b>Chip Packing</b> 	<ul style="list-style-type: none"> <li>Metal removal and feed per tooth high</li> <li>Lack of chip pocket</li> </ul>	<ul style="list-style-type: none"> <li>Decrease depth of cut and feed</li> <li>Decrease No. of flutes</li> </ul>

# Do's and Don'ts for mICRO Tool Handling



Do not issue  
Tools removing box



Always keep the Tool in  
original box



Do not carry  
loose Tools



Carry the Tools to the  
Presetter along with box



Do not hold Tools  
from fluted side

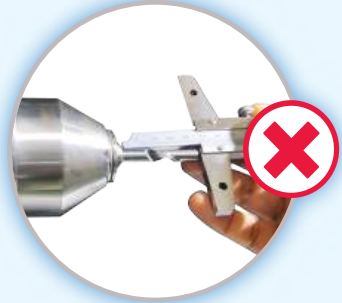


Hold Tools from  
the Shank side

## Cautions / Care During Tool Inspection

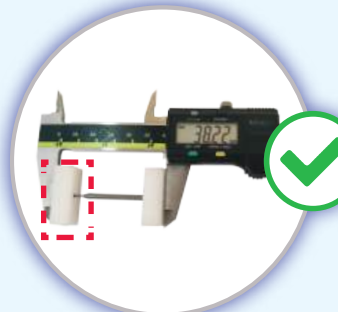


Use non-contact type equipments for  
presetting and measuring T.I.R



Avoid contact type method. By this tool  
can be damaged before usage

## Use of Vernier Caliper to Measure OAL



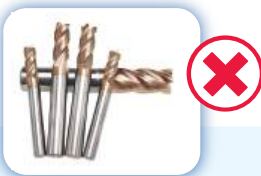
Use POM / Acrylic sheet to  
avoid damage before measurement



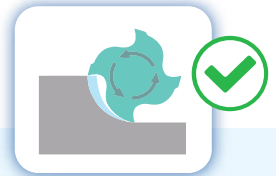
Do not directly load the  
Tool in Vernier for measurement



Avoid using flammable cutting oils  
during machining



Please ensure tools do not collide  
with one another



Apply optimal parameters based on the  
material, milling shape, strategy,  
machine rigidity, and spindle capacity



**axis**  
Tools for mICRO mACHINING



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