

 **GLADIATOR**  **ZODIAC**  **ALLIGATOR**  
Ballnose  
High Performance Ballnose End Mills

Ahead of  
**the curve**



INFINITE POSSIBILITIES.®

**QUICKGRIND**®  
carbide tooling





## INFINITE POSSIBILITIES.®

What if you could have the optimum tool, with the marginal cost increase more than covered by improved production throughput and efficiency? With Quickgrind, you can. Welcome to a world of Infinite Possibilities.®

At Quickgrind we do not limit ourselves to standard ranges, and we do not limit you to tools we happen to have in stock and want to sell you. Instead, our mission is to provide you with solution-based tooling, to give you the right tool, for the right job, at the right price.

All our ballnose cutters can be designed specifically for your application – size, diameter, neck relief, coating, reach and number of flutes can all be tailored to your needs. Through-coolant and other options are also available.

End the compromise of standard tooling. Contact our team today to discuss your applications, aims and requirements. There are no limits, only Infinite Possibilities.®

Call +44 (0) 1684 294090  
or visit [quickgrind.com](http://quickgrind.com)

## Ordering is as easy as **one, two, three**

### 1. Choose your shank spec

- Length • Diameter • Tolerance
- DIN or other shank standards

### 2. Choose your neck spec

- Length • Diameter

### 3. Choose your head spec

- Length • Diameter
- Tolerance • Number of flutes
- Helix angle • Anti-vibration
- Radial/axial through-coolant
- Coating



That's it. No catalogues to trawl through, no complicated product codes, no lengthy tables, just tell us what you need for your job and we will make it for you. Even specials can be designed, proved and delivered in days, at a cost you could recoup on your first job. That's Infinite Possibilities.®

**Remember, just ask  
we will make it for you**



# Top flight ballnose cutters

Our ballnose cutters, also known as spherical end mills, are available in three main ranges – the 2 flute Gladiator, 4 flute Zodiac, and 2 or 3 flute Alligator ballnose.

They are ideal for milling contoured surfaces, shallow slotting, finishing and pocketing in a wide range of materials and applications, especially in mould and die.

Relieved neck and taper neck versions

Force-resistive submicrograin carbide for strength and toughness

DIN or other shank standards as required

2 to 11 flutes or more

## Applications and features

- Roughing and finishing
- Complex surfaces and features
- 3D and contour milling
- Suitable for use in steels, stainless steels, ni-alloys, titanium, PH materials, tools steels, cast iron and aluminium
- High resistance to wear
- Developed to reduce machining forces and to give increased tool life
- Geometry ensures high stability during machining with enhanced chip flow
- Higher speeds and feeds possible with increased productivity and high metal removal rates
- Coatings available to increase tool life and aid chip flow

Stainless M		Steels P	
Precipitation 13-8/15-5 17-4PH	Austenitic 303/304/316L	Low alloy 1000/1100/1300	Medium alloy 200/252/300
Martensitic 403/410/416		Tool steels H13/P20/D2	High strength 420/5120
High temp alloys S		Cast iron K	
Inconel Hastelloy Incoloy	Titanium alloys Ti6AL4V Ti5Al-5V-5Mo	Grey cast iron	SG iron
Non-ferrous N		Hardened materials H	
Aluminium 6061/6082	Die-cast aluminium 10% Si	Hardened steels 45-55 Hrc	





High Performance Ballnose End Mills

# A real winner

This world beating 2 flute ballnose cutter is used to great effect in mould and die, general engineering and on components such as turbine blades.

Whether used with a 90° or 10-15° tilt approach Gladiator is a stable and accurate tool allowing for high speed cutting and machining. It is suitable for roughing, semi-finishing, finishing and super-finishing with profile, copy or contour milling. We encourage our clients to tell us what their issues, aims and future expectations are and through our Infinite Possibilities® programme then develop the optimised tools and cutting strategies for their production.







High Performance Ballnose End Mills

# A stellar performer

The Zodiac is based on our exceptional Mirage end mill and brings a new dimension to ballnose end milling.

Four flutes provide for highly efficient swarf evacuation and enable high speed and feed machining with great stability. Whether contour milling or profiling this tool excels at roughing, semi-finishing, finishing and super-finishing in a wide range of materials. As part of the Infinite Possibilities® programme we can design the optimum tool for your applications. This can be stub length, long reach with short flutes, neck relieved and with any flute number that will give you the best performance with repeatable quality, ensuring high productivity and reduced cycle times.



Our Gladiator and Zodiac ranges are available to you now, with custom-made tools on a short delivery.

Call +44 (0) 1684 294090 or visit [quickgrind.com](http://quickgrind.com)



## Applications

- Contour milling
- Profiling
- Roughing
- Semi-finishing
- Finishing
- Super-finishing

## Benefits

- Higher feeds and speeds
- Great stability
- Highly efficient swarf evacuation
- Supreme wear-resistant coatings



 **ALLIGATOR**  
Ballnose  
High Performance Ballnose End Mills

# A ballnose with bite

The Alligator ballnose is part of our successful Alligator end mill range and provides exceptional performance in most non-ferrous materials including aluminium and aluminium alloys.

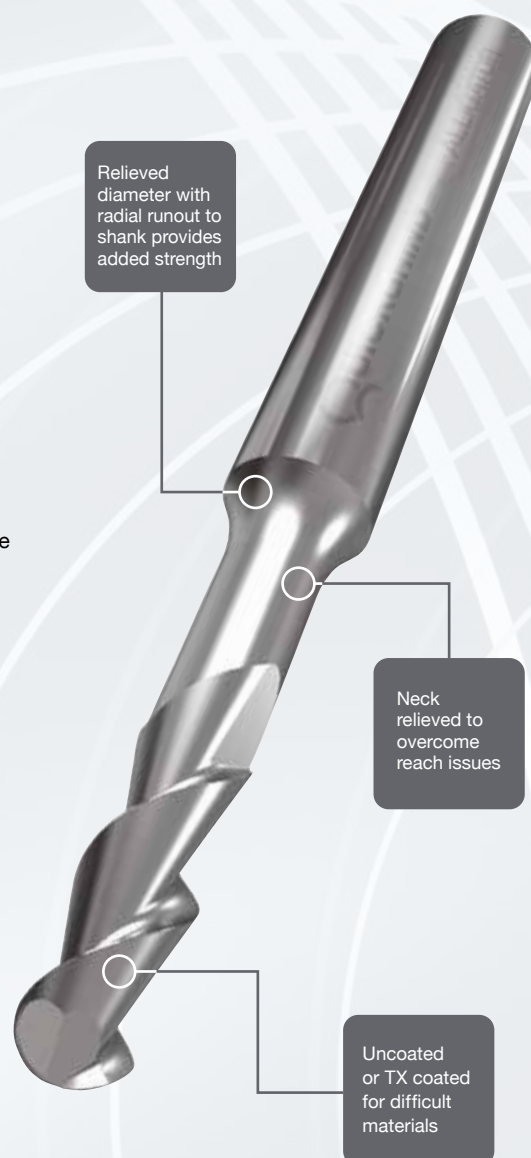
Copy milling, contour milling and profile milling are all strategies these tools cope well with, providing a high degree of swarf removal and tool wear resistance. They are available in uncoated for most applications or with our TX coating for the more testing materials.

If you are worried this will incur high costs and long deliveries, our Infinite Possibilities® programme is here to provide you with exactly the tool you need at little more than a standard tool price and on a short delivery time.

Your production will benefit greatly by talking to us, we are here to help.

The Alligator ballnose is available with 2 or 3 flutes and any overall, flute or neck length you require.

Call +44 (0) 1684 294090 or visit [quickgrind.com](http://quickgrind.com)



## Applications

- Copy milling
- Contour milling
- Profile milling

## Benefits

- Higher wear resistance
- Increased swarf removal rates



# Deep pockets

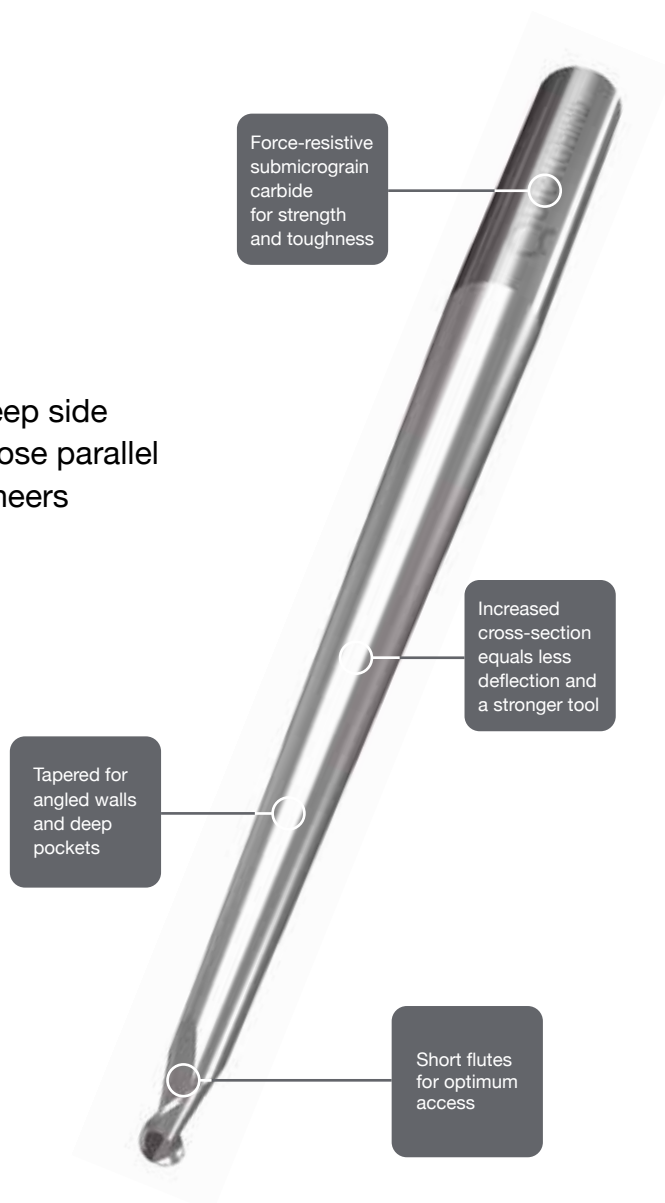
## short flutes

In mould and die components, pockets with deep side walls can cause headaches. Our Alligator ballnose parallel cutter with taper neck gives hard working engineers and programmers much needed relief.

Machining angled side walls is a common issue which is why we developed this tool, with short flute lengths and tapered necks to give adequate clearance when profile machining cavities.

Other industries also benefit from this type of tool due to the ever increasing demand for complex parts requiring angled walls, which are pushing the boundaries of feasibility for straight reach tools. A tapered reach tool brings many advantages due to the increased cross-section strength.

A tapered tool of 3-5° will give 60-70% less deflection than a straight tool, resulting in less chatter, a far better surface finish and greatly improved tool life.



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Non-ferrous N		Hardened materials H	
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# Transforming machining strategies

Eliminator is an exciting range of barrel tools that takes the arc segment of a circle to form the radius of the flute, enabling improved step down strategies when compared to ballnose endmills and reducing cycle times by up to 90%.

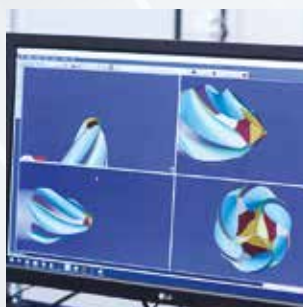
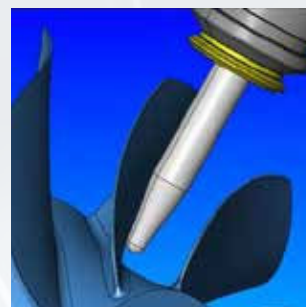
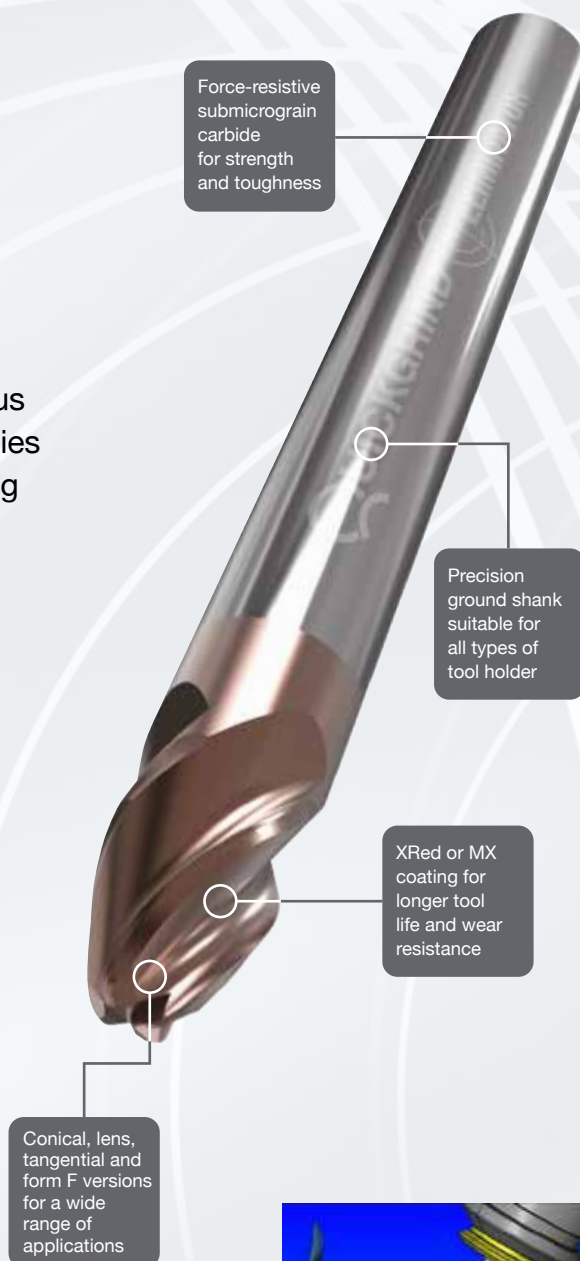
Please ask for our Eliminator brochure or call +44 (0) 1684 294090 for more information.

## Applications

- Replaces scanning with ballnose and corner radius endmills
- Highly efficient finishing and semi-finishing
- Profiling, flanks and steep walls
- Pocket milling, especially deep, hard to access surfaces
- Mill faces and blends with one tool
- Hard to reach areas without using expensive long reach tools
- Machining steep or flat planes
- Faces with minimal curvature

## Benefits

- Up to 90% cycle time reduction achievable
- Increased ap (step down), greatly reducing machining times
- Smaller cusp (scallop) height
- Tool path distance greatly reduced – better for your machine
- Two-in-one tool – side cutting and ballnose cutting
- High Ra finish
- Reduced effects of thermal deformation (heat transfer)
- Long tool life
- Suitable for sharpening and recoating multiple times with our QuickEdge programme





# Reducing cycle times and increasing profits

Do you have a component that is taking too long to manufacture? Are you struggling to find the time and resources to investigate advanced machining and cutting tool strategies that could easily double your output? Yes? Then you need to put QuickCam to the test.

QuickCam is the advanced service from Quickgrind designed to support you with the machining of complex parts in difficult materials.

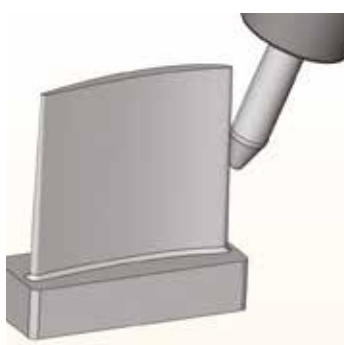
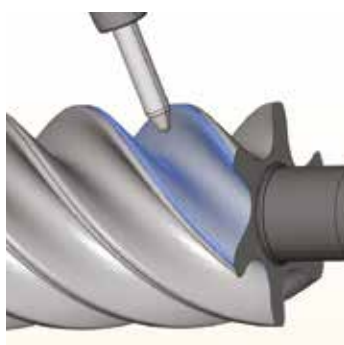
Implementing QuickCam in your business will give you reduced cycle times, leading to reduced tooling costs, increased output and improved capacity.

The bottom line? Improved throughput, more satisfied customers and increased profitability.

Contact us today to arrange  
your free initial assessment.

**t** +44 (0) 1684 294090

**e** [quickcam@quickgrind.com](mailto:quickcam@quickgrind.com)



## Benefits

- Reduced cycle time costs
- Reduced tooling costs
- Increased output
- Improved capacity
- Increased profits



# Adding value

## to your tooling investment

All our ballnose cutters are suitable for remanufacture. Our unique QuickEdge process can give you up to nine times extra usage out of your tooling, and with material (and environmental) costs increasing, the benefits of remanufacture are clear.

- Tools controlled by size, number of reissues and remanufactures
- Extremely attractive price and performance over the life of the tool
- Reduces the need for virgin raw material, a limited resource

Remanufacture doesn't mean compromising on quality. It has always been our policy to produce tools of such high quality that they can be used more than once. Which means that even after nine remanufactures you will continue to enjoy new tool performance, and a clear conscience.

Ask  
about our  
introductory  
offer today





# 24/7 control

## of your tooling inventory

Is your tooling inventory reduced to a minimum? Is it secure?  
Are your re-stocking orders generated automatically and on time?  
Do you want to reduce your tool purchase administration costs?

Quickgrind's robust, proven tool vending solutions are the answer to all these issues and more. Once we have audited your tooling requirements and consumption levels, we will supply you with a fully stocked machine (our machines can hold from 528 to 1,680+ individual tools). Usage and stock levels are then automatically monitored and replacement tools sent before your stock runs out.

And because your tooling inventory and usage levels are pre-determined, you regain complete control of your purchase administration time and costs, to as little as one purchase order and one invoice per month.

Save time and money. Take control of your tooling with a vending solution from Quickgrind.



### Benefits

- 24/7 secure access
- Allows minimum stock holding
- Automatic re-ordering
- User-friendly operation
- Tailor access to specific users and times
- Easy access to stock information and statistics
- Audit your tooling stock at the push of a button
- Suitable for new and remanufactured tools
- Stocks a wide range of tools types and sizes, and for high or low stock turnover
- Reduces purchase administration costs



# Improving your machining performance

Quickgrind's state-of-the-art Technical Centre offers a comfortable and technologically advanced environment to discuss all of your cutting tool requirements, challenges and ambitions.

Our experts will work with you to conduct trials whilst generating and running tool paths and machining strategies. Our investment in the centre enables us to demonstrate what is possible with our ground-breaking tooling and tool management solutions.

The centre is fully equipped with a seminar theatre and training room, meeting rooms and machining centres. Visitors can take a guided tour of our production facility, undergo technical training and discuss their specific requirements.



Call us  
today to  
arrange  
your visit

