SPECTRE PHANTOM BULLDOG REAPER

High Feed End Mills

High feed **for higher productivity**

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 high feed cutters can be designed specifically for your application and are available in virtually any size, diameter, radius, neck relief, coating or reach. 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

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

1. Choose your shank spec

- Length • Diameter
- Tolerance • Type HA/HB/HC
- Through-coolant
- Coolant grooves… and more

2. Choose your neck spec

- Length • Relieved
- Diameter • Coolant grooves

… and more

3. Choose your head spec

- Diameter • Tolerance
- Length • Number of flutes
- Helix angle/s • Anti-vibration
- Radius • Chamfer
- Radial/axial through-coolant
- Coating… and more

That's it. No catalogues to trawl though, 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

SPECTRE PHANTOM BULLDOG REAPER

High Feed End Mills

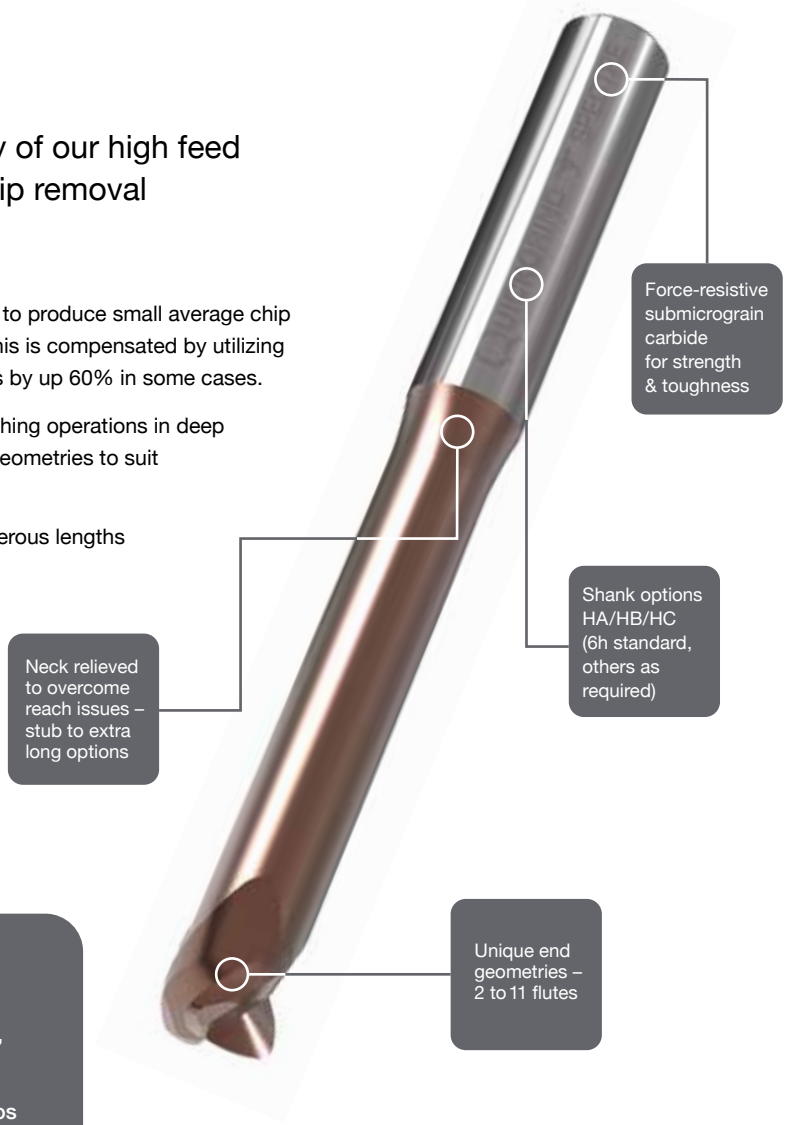
Unique geometries
for lower cutting forces

The precision ground end geometry of our high feed ranges allows for highly efficient chip removal at high feed rates.

The strategy involves using shallow depth of cut (ap) to produce small average chip thickness eliminating vibration and tool deflection. This is compensated by utilizing high feed rates resulting in greatly reduce cycle times by up 60% in some cases.

The tools lend themselves to roughing and semi-finishing operations in deep and shallow pockets and are designed with cutting geometries to suit a wide range of materials.

Available from 2.00mm to 32.00mm diameter in numerous lengths from stub to extra extra long.



Applications

- Rough machining operations such as slotting, pocket milling and contour machining
- Pocketing with high length over diameter ratios and intricate features
- Consider these tools where the use of small diameter, long series and extra long end mills is fraught with danger
- Plunging or helical ramping
- Stainless steels, duplex, super duplex, Inconel, titanium, PH materials, tools steels, cast iron and hardened steels

Benefits

- Unique edge geometry lowers cutting forces
- Strong, stable and efficient machining
- Coating aids chip flow with high wear-resistance
- Ideal for extended reach in deep cavities

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

Hardened materials H
Hardened steels 45-55 Hrc

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SPECTRE
High Feed End Mills

High feed, **high ROI**

Stainless M

- Precipitation 13-8/15-5 17-4PH
- Austenitic 303/304/316L
- Martensitic 403/410/416

High temp alloys S

- Inconel Hastelloy Incoloy
- Titanium alloys Ti6AL4V Ti5Al-5V-5Mo

This solid carbide coated high feed tool was initially developed as a 3 flute to machine deep pockets at a UK F1 team.

Due to its success Spectre has also now been produced with 5 flutes. As with all high feed tools the large radii enables excellent stability when roughing at high feed rates. The combination of our unique geometry, small depth of cut and high feed means clients realise a very good ROI. Cycle times are reduced resulting in greatly improved production throughput.

We encourage our clients to tell us what their issues, aims and future expectations are and through our Infinite Possibilities® programme we develop the optimised tools and cutting strategies for their production.

PHANTOM
High Feed End Mills

Four flutes, **extended life**

Stainless M

Precipitation 13-8/15-5 17-4PH

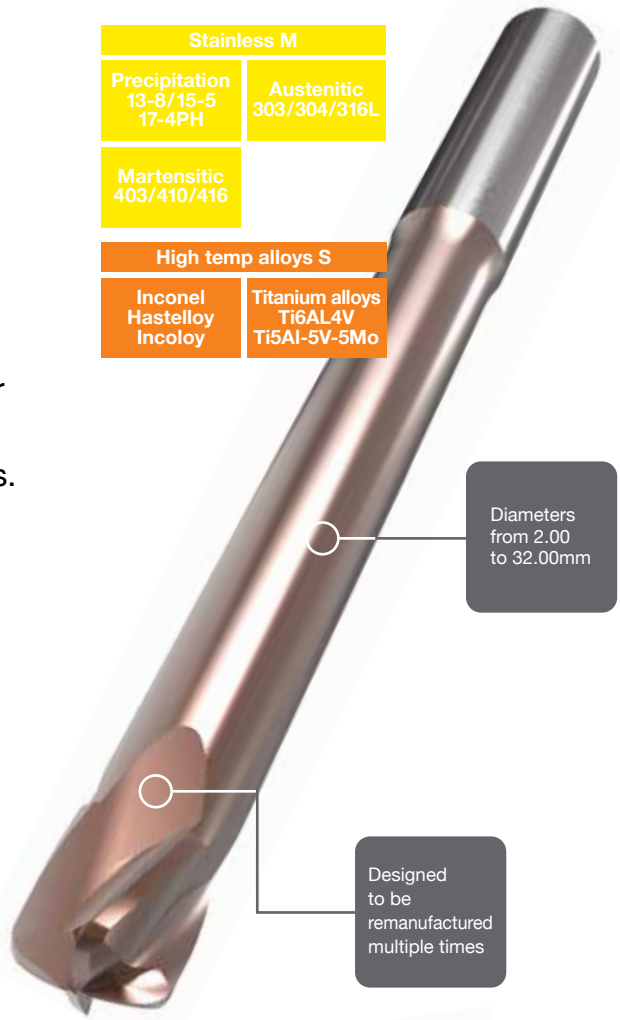
Austenitic 303/304/316L

Martensitic 403/410/416

High temp alloys S

Inconel Hastelloy Incoloy

Titanium alloys Ti6AL4V Ti5Al-5V-5Mo



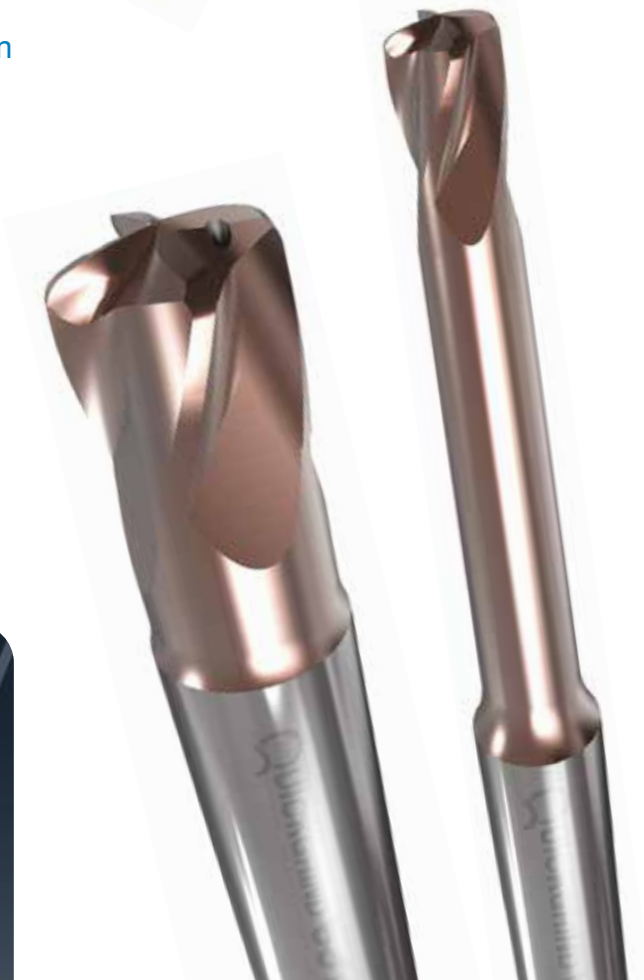
Phantom is a 4 flute that performs like a 16 flute – so said one happy client. A development of our Spectre the Phantom is a lens type tool that has been designed to be remanufactured many times.

Phantoms achieve 5-6x tool life over normal end mills in roughing operations and have become firm favourites in motorsport and aerospace, where they are used to machine titanium and stainless steel. Through-coolant versions blast away chips and can last three to four times longer than non-through-coolant tools.

A relatively small depth of cut at high feed is delivering great advantages to engineers and programmers. Join them and talk to us about your applications today… by working together we can provide you with optimised tools and programming data to satisfy your production aims and ambitions.

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

Call +44 (0) 1684 294090 or visit quickgrind.com



Applications

- Contour machining
- Slotting
- Pocket milling
- Plunging
- Helical ramping

Benefits

- Low cutting forces
- Coating aids chip flow
- Ideal for extended reach in deep cavities
- QuickEdge compatible – remanufacturable

BULLDOG
High Feed End Mills

The very best of **British**

The superior mould and die tool, Bulldog is available in an almost infinite choice of size, diameter, radius and reach. This state-of-the-art masterpiece produces exceptional results with significant productivity increases and reduced production costs.

Specially designed to reduce vibration under heavy cutting conditions and with high volume metal removal (HV-MRR), Bulldog is ideal for operations such as deep pocketing and slotting in difficult to machine materials without push-off as found with inferior tools.

- **Higher speeds and feeds possible with increased productivity and high metal removal rates**
- **XRed and MX coatings aid chip flow and give high resistance to wear**
- **Developed to suppress vibration and harmonics with reduced machining forces and to give increased tool life**
- **Enhanced radii geometries ensure high stability during machining with enhanced chip flow**
- **Unequal helix and variable flute design**
- **Strengthened core**
- **Ideal for roughing applications in mould and die steels**
- **Suitable for tool steels such as H11, H13, D2 and P20 and hardened alloys up to 62HRC**

The Bulldog range is available to you now, with custom-made tools on a short delivery as part of our Infinite Possibilities® programme.

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Steels P	
Low alloy 1000/1100/1300	Medium alloy 200/252/300
Tool steels H13/P20/D2	High strength 420/5120
Cast iron K	
Grey cast iron	SG iron
Hardened materials H	
Hardened steels 45-55 Hrc	

REAPER
High Feed End Mills

High feed,
for hardened steels

Available in stub and short length in sizes from 6.00 to 12.00mm, this tool performs extremely well in hardened steels such as H13 and D2 ≥45Hrc.

A highly efficient rouging tool for producing pockets and cavities up to 1"/25mm deep, Reaper's 4 flutes and specially designed end geometry make it suitable for running at high speed and feed taking shallow depths of cut.

The corner radii enable excellent chip thinning with rapid chip removal and long tool life. Suitable for flat bottom finishing due to the end design but not able to be remanufactured.

Hardened materials H

Hardened steels 45-55 Hrc

Applications

- Slotting
- Pocket milling
- Plunging
- Helical ramping

Benefits

- Low cutting forces
- Coating aids chip flow
- Ideal for hardened steels
- Long tool life

MIRAGE MIRAGE SUPER DELTA
High Performance End Mills

Top flight performers

Highlighted here is one of our end mill ranges that combines superbly with our high feed tools.

Designed for multiple applications in a wide range of materials especially stainless steel, titanium and super alloys, Mirage end mills provide unrivalled high performance. Delta, its three flute counterpart, also has extended reach as a normal feature.

Features

- True thoroughbreds, giving high performance to discerning buyers, engineers and programmers around the world
- Mirage options include 4, 5 or 6 flute or more, stub and long flute, long series, chipbreakers and through-coolant
- With any combination of edge preparation, radius or reduced neck to allow you to optimise your programming and machining without compromise
- Unrivalled performance on titanium, inconel, duplex or stainless steel
- Suitable for trochoidal milling with full flute engagement as much as 3 x D
- Our chip-breaker versions reduce swarf to small, manageable sizes
- Capable of being reground and recoated a number of times with our remanufacturing service – reducing your tool budget by as much as 40%

Excellent in these materials

Stainless M

- Precipitation 13-8/15-5 17-4PH
- Austenitic 303/304/316L
- Martensitic 403/410/416

High temp alloys S

- Inconel Hastelloy Incoloy
- Titanium alloys Ti6AL4V Ti5Al-5V-5Mo

Limited use in these materials

Steels P

- Low alloy 1000/1100/1300
- Medium alloy 200/252/300
- Tool steels H13/P20/D2
- High strength 420/5120

Hardened materials H

- Hardened steels 45-55 Hrc

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QUICKCAM®
ultimate profitability

The latest
machining strategies

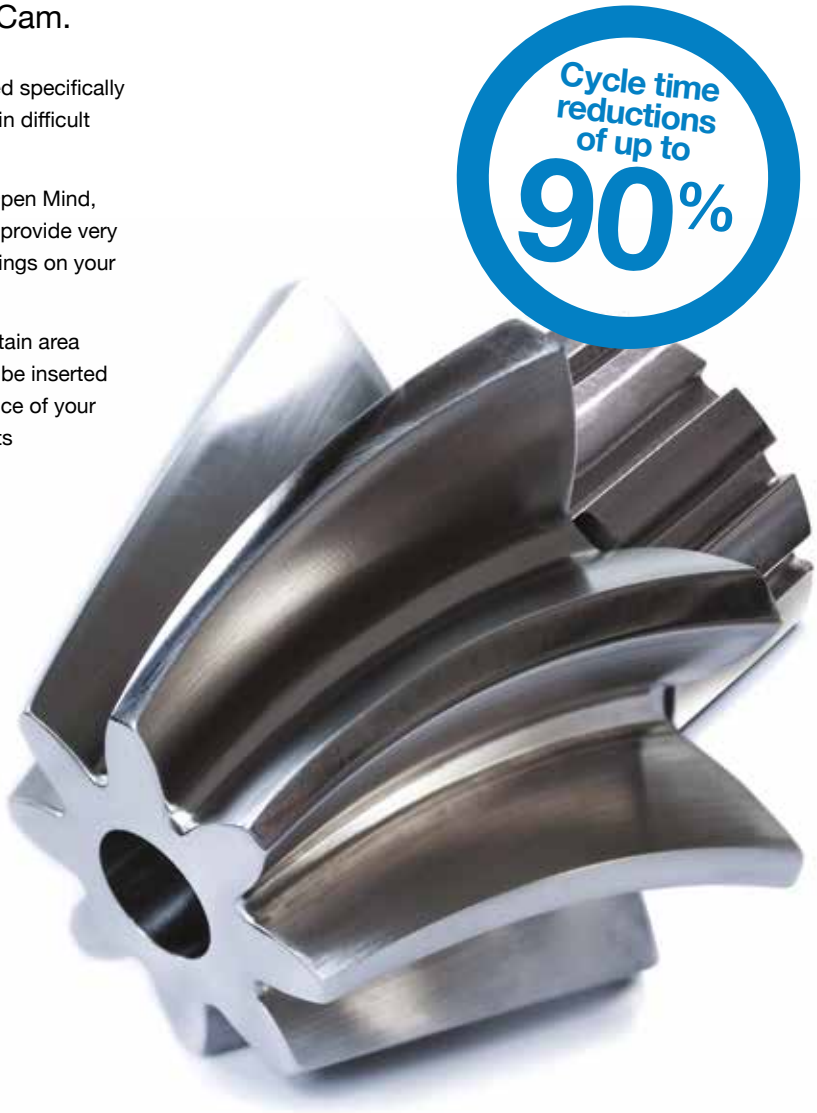
Do you have a component that is taking too long to manufacture? Are you struggling to find the time and resources to investigate advanced machining and cutting tool strategies that could easily double your output? If so, you need QuickCam.

QuickCam is Quickgrind's advanced service designed specifically to support you with the machining of complex parts in difficult materials, like the bevel gear shown here.

Supporting all of the major CAM solutions such as Open Mind, CGVericut, NCG Cam, Solid Cam and more, we can provide very accurate cycle time studies to show instant time savings on your projects.

You may only require an optimised toolpath for a certain area of a part. We can provide an NC program which can be inserted into your existing program, enhancing the performance of your machining process and ultimately allowing more parts to pass through your machine shop.

And if you already have an optimised strategy for your machine, we can of course re-tool your component with our extensive range of high-performance solid carbide tooling.



Benefits

- Reduced cycle times
- Reduced tooling costs
- Increased output
- Better due date performance
- Improved capacity
- More throughput
- More happy customers
- More profit

QUICKEDGE®
tooling - good as new

Adding value
to your tooling investment

Phantom high feed end mills are suitable for remanufacture. Our unique QuickEdge process can give you up to seven times extra usage out of your tooling, and with material costs continuing to increase you can't afford to ignore the benefits of remanufacture.

- Tools controlled by size, number of reissues and remanufactures
- Reduced logistics costs
- Extremely attractive price and performance over the life of the tool

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 seven remanufactures you will continue to enjoy new tool performance.

Ask about our introductory offer today

Tools shown not Phantom

To produce a precision made product is the norm but to produce it consistently is precise

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QUICKVEND®
tooling on demand

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 300 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, save 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
- 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

QUICKGRIND® Technical Centre

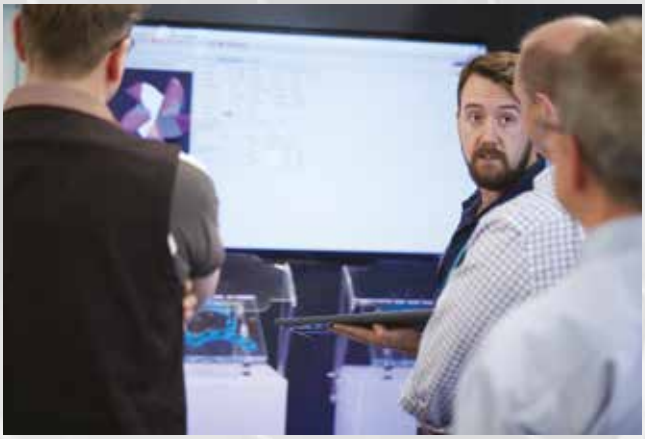
Improving
your machining performance

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



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QUICKGRIND® carbide tooling

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