

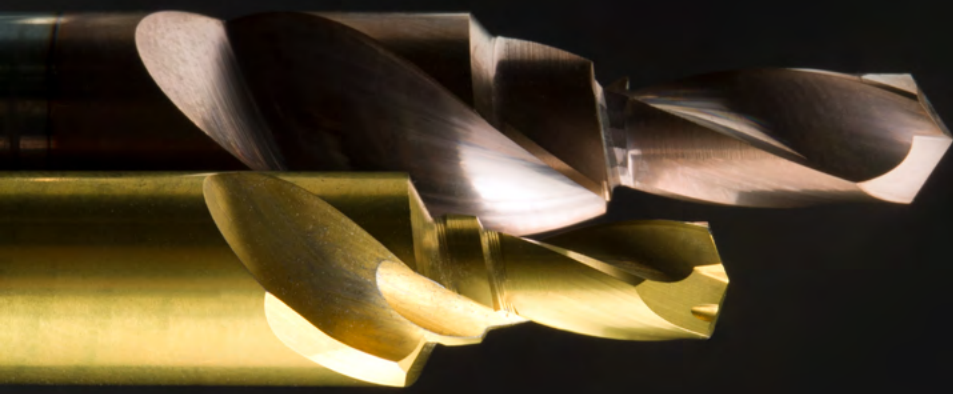
# YOUR GUIDE TO COATINGS

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PRODUCED BY

  
**A&S**  
TOOLING



# What are the benefits of Coating?

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Ultimately, Coating a cutting tool **increases productivity** and **extends the life** of the tool.

The coating increases hardness which in turn increases the length of time the tool will last and improves the speed at which it will run.

It also **improves efficiency** when cutting and drilling difficult to machine materials because the coating reduces friction and adhesion to the substrate. Because coating makes cutting easier, it also makes the process **more economical**.

**Heat dissipation:** Dry machining and high speed cutting generate a significant amount of heat. Coating the tool increases thermal stability and provides a high oxidation temperature thus dissipating the heat away from the tool, onto the part. Reduced heat means increased efficiency and tool life.



# What is Coating?

Tools can be coated and re-coated with various alloys depending on your requirements.

**Some of the more popular coatings include:**

TiN

## Titanium Nitride

This general purpose PVD coating increases hardness so is recommended for High Speed Steel (HSS) tooling. It is effective in a wide area of metal cutting operations.

## What is PVD coating?

*Physical Vapour Deposition is a technique where a material is evaporated and condensed to deposit a thin coating onto various surfaces, often metal, to give them a hard durable coating.*

TiCN

## Titanium Carbo-Nitride

This coating has the addition of carbon which means that hardness is increased even further, with the added benefit of surface lubricity being significantly improved. (The higher the lubricity, the less the friction, therefore less heat, therefore a longer tool life).

AlTiN

## Aluminium Titanium Nitride

The layer of aluminium oxide means that the tool will last longer in high heat applications. It is considered one of the most resistant and hardest coatings and is recommended for the machining of cast iron and heat resistant alloys.



TiB<sub>2</sub>

## Titanium DiBoride

Titanium diboride is extremely hard. This is recommended for use with silicon aluminium alloys, titanium alloys, magnesium alloys and copper alloys. Unlike other coatings, TiB<sub>2</sub> does not react with aluminium, so no metal particles adhere to your tools.

# Re-coating: Useful Information

- Re-coating of a tool adds around 2-3 microns of total thickness to a round shank of a tool.
- Using coating on an undersized tool to make it fit for purpose is not recommended.
- Performance will be like-new if the coating is applied to a newly cut (or re-cut) tool.
- All coolant holes must be open prior to coating.

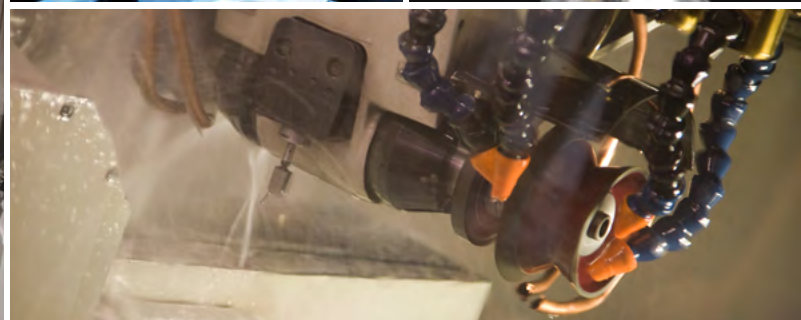
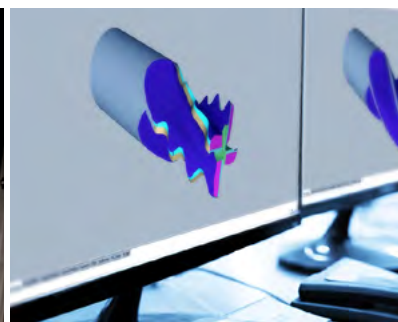
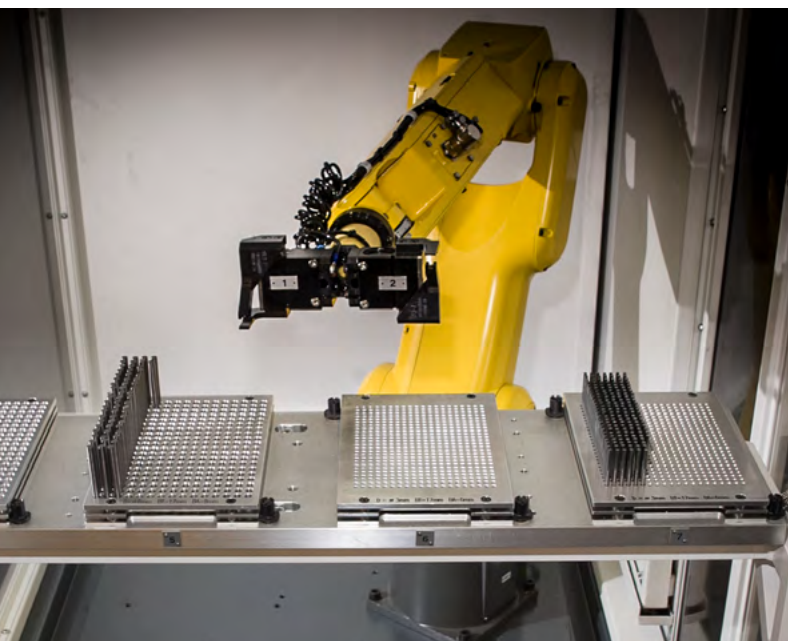


# A&S Tooling

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A&S Tooling are based in Leicestershire and began as a conventional regrind shop. We have specialised in manufacturing and designing the highest quality cutting tools for over 30 years.

Our customer base is diverse, with the majority being repeat or long term supplier partnerships. We work across a variety of sectors, ranging from Aerospace to Formula One, and are renowned for our services across the UK.



We are constantly growing our innovative facilities to meet the standards of new technical advances and the most demanding of requirements.

We understand your needs and will use our state of the art technologies and extensive industry knowledge to ensure that we provide you with the best cutting tools on the market.

We have close working relationships with our customers, often becoming their preferred

engineering supplier. This supplier partnership provides benefits for the customer such as having a multi-skilled workforce who have both traditional and modern engineering techniques, as well as advanced engineering and innovative solutions.

We began as a conventional regrind shop and we have managed to maintain our original, great service throughout our years of growth and success.



# Our range of services

**Our knowledge doesn't just stop at coatings.** We also offer a range of other manufacturing processes, providing you with the best quality, technical solutions.

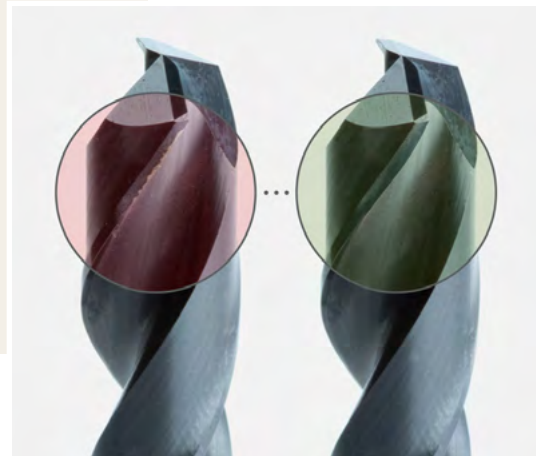
## REGRINDING SERVICE

Our regrinding service will have your old and trustworthy tools performing like new, as quickly as possible, saving you both time and money.

Our engineers are experienced in both traditional and modern techniques. We offer advanced engineering and innovative solutions that breathe life back into your tools and save you thousands of pounds in brand new equipment. Our extensive knowledge within the industry means that we can have your tools back in pristine condition quickly, reducing your downtime and improving your services.



Prior to collection, your tools are placed into one of our regrind boxes with a regrind sheet.



## NEED A NEW TOOL?

We can design you a cutting tool to meet your exact requirements, ensuring that your design is of the highest quality and performs exactly as you need it to. Need a bespoke design? We can do that too.

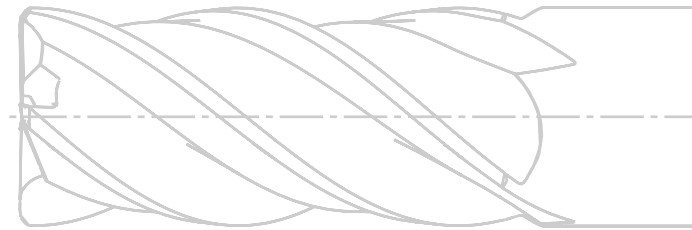


# Services continued...

## TOOL DEVELOPMENT

Our tool development process is straightforward in many ways. We are able to create a precise interpretation of the component profile, which is then transferred to CAD, where adjustments can be applied more easily. Materials, machining speeds and tolerances are all kept in mind and are used to calculate the precise cutting profile, ready to be brought to life.

We understand that sometimes you need a tool which meets the high demands of a difficult task, and we pride ourselves on being able to understand your needs. You expect quality and precision from both our manufactured cutting tools, and our bespoke service, and we're dedicated to meeting your expectations.



## GT4V HIGH PERFORMANCE ENDMILLS

We also offer a range of GT4V high performance Endmills which provide higher cutting speeds and longer tool life. They are specifically designed to provide excellent results on titanium and exotic alloys, and abrasive work piece materials.

Our GT4V range is priced competitively, formed from submicron grain solid carbide and feature a multilayer Nano composite TiSin coating for maximum durability.



Service is the key foundation of our business. Our aim has always been for our customers to be happy with the services we provide and the end result we deliver to them. Our customers are never disappointed and are often pleasantly surprised by our ability to respond to their needs with innovative solutions, rapid prototyping and valuable engineering.

We have close relationships with both our trading and supplier partners, meaning that we are able to respond to requests quickly and are flexible with our services.

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If you would like to know more about our coating services and our range of precision manufactured cutting tool services, get in touch with us today:

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[info@astooling.com](mailto:info@astooling.com)

[www.astooling.com](http://www.astooling.com)



**CELEBRATING 30 YEARS OF PRECISION**