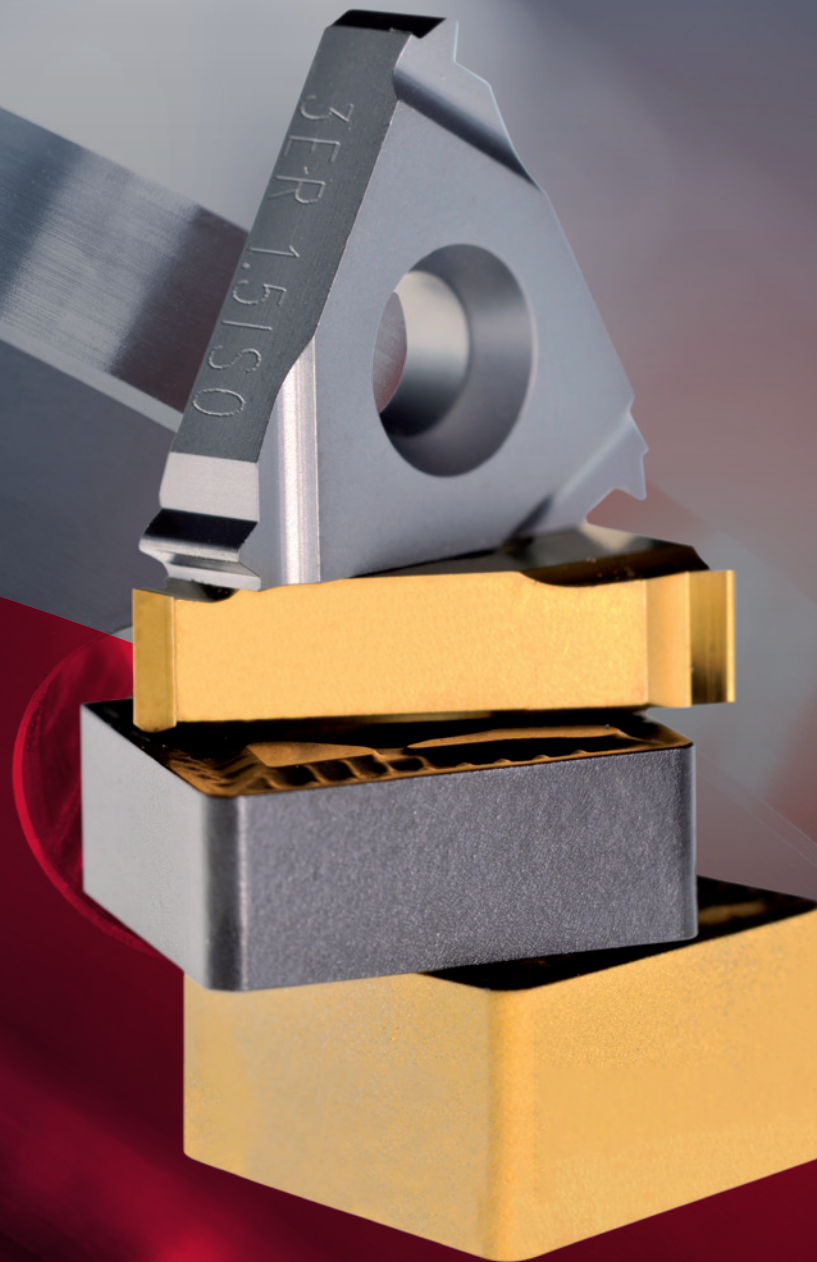




Vapormatt



# Cutting Tool Inserts

Automated surface preparation, edge honing and peening – the wet blasting approach to durable high quality inserts

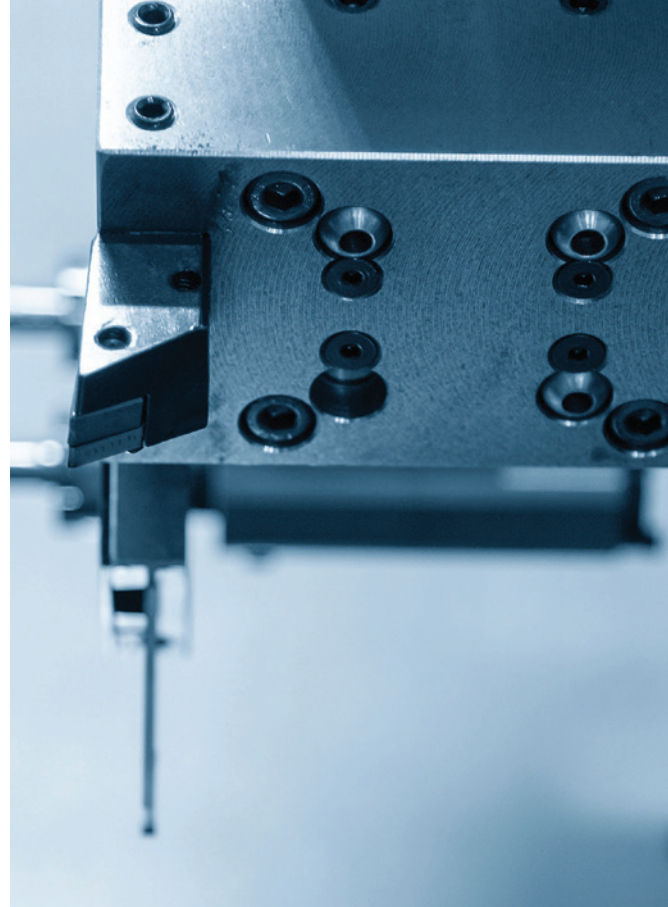
When it comes to cutting tool insert finishing, nothing comes close to the effectiveness and control of wet blasting. Our wet blasting systems reliably and repeatedly apply the different finishing processes essential for durable high quality cutting tool inserts, including:

### Preparation for coating

Coatings adhere much better to reactive surfaces with a high surface energy, something the wet blasting process is particularly good at creating. In addition, any cobalt skin that might exist is removed, along with burrs, machining notches, heat marks and any heat scale that might have arisen from the production process.

But that's only part of what is required for a high quality durable coating. After wet blasting, inserts need to be meticulously cleaned prior to the coating process.

Any material left on the surface of an insert, no matter how fine, will likely result in a compromised coating. We've perfected the multi-stage cleaning process on our Tiger system to remove every microscopic particle from the insert's surface.



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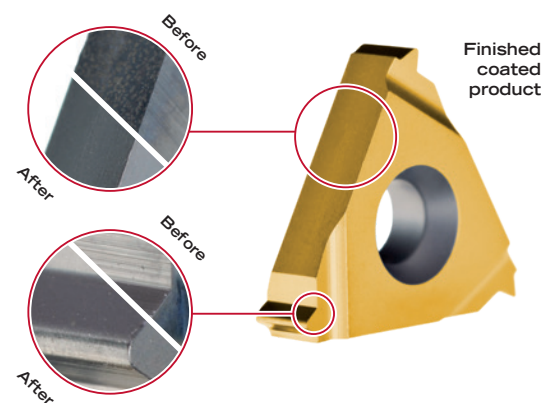


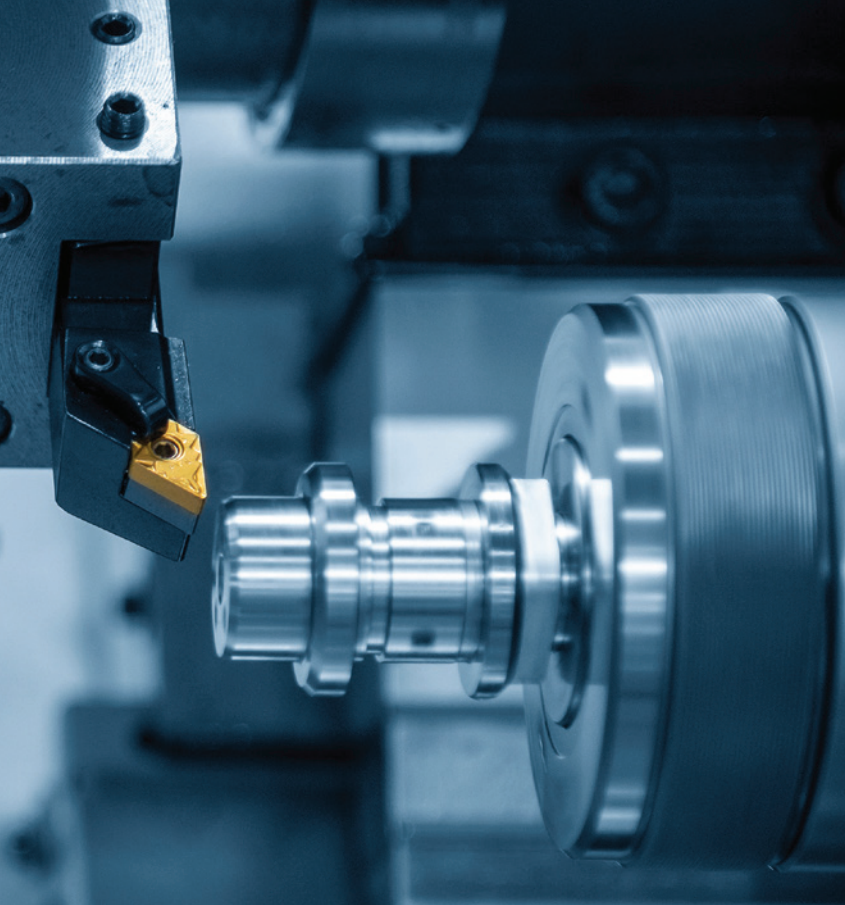
### Post coating finishing

Wet blasting, once the coating has been applied, smooths the surface coating to produce a high quality aesthetic finish to a specific RA. The removal of imperfections like coating droplets ensures the inserts operate more efficiently when in use.

### Post coating peening

An additional benefit of wet blasting after coating is peening to reduce the tensile stress in the coating. This produces strain hardening of the coating to ensure it remains firmly adhered to the insert for its lifetime.



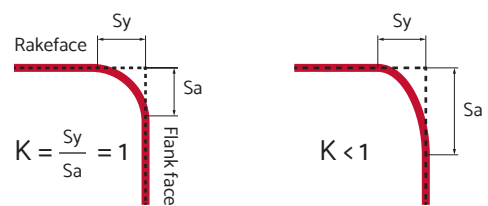


### Application of a specific K-Factor

An important part of applying an edge hone, the K-Factor can make a big difference to the cutting performance and durability of inserts.

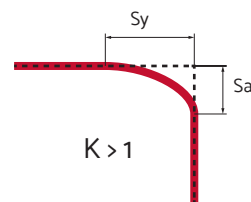
It describes the symmetry of a cutting edge; a K-Factor of 1 is completely symmetrical, a K-Factor of greater than 1 is a 'trumpet' or 'reverse waterfall' hone and a K-Factor of less than 1 is a 'waterfall' hone. The optimum form for the micro-geometry of a cutting edge is largely dependent on the application of the cutting tool, so the ability to control the K-Factor is very important.

### Specific K-Factor



Symmetric hone

Waterfall hone



Reverse waterfall hone

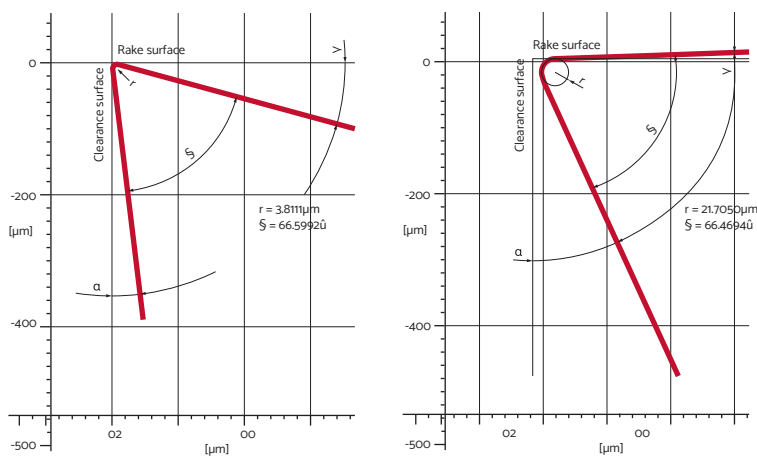
### Selective coating removal

Different coating layers have purposely different characteristics, for example one layer might be thermally conductive whilst another is wear resistant. Removing a layer on a particular surface allows the required characteristics to be presented.

Depending on your requirements all or some of these processes can be delivered by one of our automatic wet blasting systems.

Suitable for replaceable inserts of varying geometries, our high-precision and highly controllable wet blasting systems reliably deliver a consistent finish every time. Our range of systems caters for smaller manufacturers in need of a compact automatic system, right up to the world's largest cutting tool insert manufacturers, where we've firmly established ourselves as the global leader in cutting tool insert finishing technology.

### Edge Hone Application



### Edge honing

The cutting tool insert production process results in sharp cutting edges that can become damaged if immediately used to cut hard materials at speed. If left like this, your customer could perceive your inserts as being of poor quality, ultimately damaging your brand. To resolve this issue, wet blasting can apply a defined edge hone to your insert with unparalleled levels of control and accuracy. This results in an insert that doesn't need running-in, and can be immediately used at full production speed.

## Why work with us?

Vapormatt isn't just the world leader in wet blasting. We invented the process and remain solely focused on it to this day.

Since Norman Ives Ashworth developed the first wet blasting machines in the 1940s, we've been developing, improving and refining wet blasting for edge radiusing, surface preparation and peening. And we're still led by the Ashworth family today, continuing to design and manufacture bespoke machinery and after-market services built to the specific requirements of your cutting tool inserts business.

Our expertise spans many different sectors: from tooling carbide insert manufacturing, to stainless steel weld cleaning. Our breadth of knowledge means we can explore a wider range of applications that benefit a business like yours.

Because at Vapormatt, while we might be pioneers of wet blasting technology, we never believe the job is done. We're constantly researching, developing our techniques and discovering new technological enhancements that we can apply to cutting tool inserts. Consequently, we hold and have patent applications pending in significant areas of process control and repeatability.

When working with you, we'll build a long-term technical partnership, giving you access to our know-how and world-leading wet blasting services. As a result, we understand you may need us to develop methods and processes in confidence. You'll benefit from our discretion too – in fact, we have a long track record of doing just that with our key customers across a number of high-tech sectors.

## What you can expect of us?

- **Integrity** - We always conduct business with you in a confidential, honest, open and ethical manner
- **Commitment** - Every member of our team aims to exceed your expectations at every level
- **Innovation** - We're at the forefront of wet blasting technology, implementing our technical expertise
- **Value** - You gain value from us through our high levels of service and technical excellence
- **Collaboration** - As a customer focused company, we work collaboratively to ensure you enjoy the best possible experience

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## The Vapormatt Promise

In designing and manufacturing specialist machines that meet your exact requirements, we're always improving. Always refining. Always pushing the boundaries. We build on the successes of the past, incorporating proven designs and approaches, and combine them with innovative thinking to meet the specific challenges we face together with you.

Throughout that collaborative process, we're also completely honest and discreet. And it's in this respect that we make a promise to you.

As we develop more efficient, more seamless and more effective ways to deliver the benefits of wet blasting to you, any off-the-shelf solution is unlikely to be suitable. So complete validation of every design detail is practically impossible, and some functions – software, for example – will inevitably need modification as they're integrated into your processes.

Equally, once the equipment is installed on your premises, things are unlikely to be up and running without a glitch from the first moment, in a plug-and-play manner. Performance will always improve as operators and maintenance teams become familiar with the machines and their operation.

Other manufacturers might shy away from such an honest admission. However, we accept that this is simply part of building and refining the right wet blasting machines for you. That's why we promise to make the entire Vapormatt team, including our engineers, designers and sales specialists, available to offer advice, guidance and practical assistance once the equipment is installed and integrated in your workplace.

**And we won't be satisfied until it's working to its full potential and this promise is kept.**

### The four pillars of our promise:

- To continuously improve the design and manufacture of our equipment
- To provide you with machines of the highest possible quality
- To support you in achieving optimal performance from your machines
- To collaborate with honesty and discretion