



Vapormatt



Round shank tools

Precision automated finishing for round shank tool manufacturers, re-grinders and coating centres

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Our tried and tested wet blasting machines can complete multiple finishing processes in a minimal number of operations for significantly reduced tool handling costs.

Encompassing drill bits, end mills, thread mills or taps, bullnose router bits, burrs, step drill bits and others, round shank tools perform a wide variety of jobs.

The extra investment customers make in high quality tools, especially carbide tools, reflects the performance and longevity they expect. Customers typically turn to trusted brands they are confident will not let them down on quality.

Creating a highly reactive surface for coatings

A common area of quality concern for round shank tools is the successful application of a durable PVD coating. A highly reactive surface helps ensure even coating application and strong coating adherence. Wet blasting is exceptionally good at creating reactive surfaces to a specific Ra, more so than any other type of finishing.

Removal of coating imperfections

Opportunities to improve the quality of the tool continue after coating. Wet blasting after coating removes coating imperfections, like coating droplets, to leave a uniform surface with an optimum Ra surface roughness for the cutting operation required from the tool.

Peening coatings for increased durability

Coatings like PVD typically have an incumbent tensile stress that can reduce their durability. Wet blasting can be used topeen the coating, converting tensile stresses into compressive stresses and in turn, dramatically improve the durability of the coating.

Before



After



Edge honing for a more reliable cutting edge

Another measure of quality is the durability of the cutting edge. In the same way a highly sharpened pencil is prone to snapping, a tool's cutting edge, when highly sharpened can become easily chipped and damaged.

'Let our technical edge help improve your cutting edge'

The solution is to apply a slight edge hone that helps prevent chipping and other damage and allows the tool to run at full production speed from new.

'One of our customers was resharpener high-performance drills but was not edge-honing them. Using our automated Oncilla wet blasting machine, they applied a specific edge hone which increased tool life by five to seven times.'

Wet blasting can apply this edge hone to a specific micrometre tolerance and profile, otherwise known as a K-Factor, to suit the application the tool is designed for. Profiles can range from a waterfall hone with a K-Factor greater than one to a reverse waterfall or trumpet hone with a K-Factor of less than one.

Edge honing to produce the ideal 'chip'

The consistent edge hone produced by wet blasting also allows the tool to generate an ideal and consistent 'chip' with an optimum depth and curl, resulting in longer tool life and a better finish. Chip evacuation is improved, whilst friction, vibration and built-up edges (BUE) are reduced.

Beyond the benefits of pre and post coating and edge honing, wet blasting offers several other important benefits for round shank tool manufacturers:

- **Surface cleaning:** Wet blasting effectively removes contaminants, oils, residues, grease and oxides from the surface of tools. The resulting clean surface is essential for coatings, treatments, and subsequent manufacturing steps.
- **Deburring:** In the same wet blasting process as cleaning and other applications, tools are completely deburred.
- **Enhanced durability:** By eliminating surface flaws, wet blasting can improve the durability and resistance of round shank tools to wear and corrosion, extending their operational lifespan.
- **Reduced friction and wear:** Smoother surfaces resulting from wet blasting can minimise friction and wear during the tool's use, contributing to better performance and longer life.
- **Improved worker safety:** As wet blasting eliminates airborne dust and contaminants, it contributes to a safer and healthier work environment for operators.
- **Environmental considerations:** Wet blasting produces less waste and is more environmentally friendly compared to dry blasting methods, contributing to sustainable manufacturing practices.



Process control and automation

Another great advantage of wet blasting is its high levels of process control. With numerous controllable variables like air pressure and abrasive media concentration, it is possible to achieve the exact uniform surface finish required.

'Vapormatt are second to none when it comes to controlling the consistency of output from blast guns.'

Automation ensures the perfect finish achieved by those controllable variables is precisely delivered to every part of the tool's body. It also ensures the same complete and accurate wet blast finish is delivered every time.

In a crowded and highly competitive market, customers seeking high quality round shank tools will look to the brands they know and trust. Wet blasting can help ensure your tools repeatedly deliver the high quality expected from your brand.



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 round shank tool manufacturing business.

Our expertise spans many different sectors: from carbide round shank tool manufacturing, to additive manufacturing. 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 round shank tools. 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 can you 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

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 operations.

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 into 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

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