

Case study

Six Sigma level edge honing for a US manufacturer of carbide thread mills

A US manufacturer* of high-end carbide round shank tools approached us about a new thread mill they were bringing to market.

With a long-established reputation for outstanding quality, the manufacturer had implemented Six Sigma for its quality standard. Six Sigma is a set of methodologies and tools used to improve business processes by reducing defects and errors, minimising variation, and increasing quality and efficiency. The goal of Six Sigma is to achieve a level of quality that is nearly perfect, with only 3.4 defects per million.

To help ensure commercial success, they had also benchmarked their new product against the very best the competition had to offer. Off the back of this research, they had identified the most suitable grade of carbide, the best grinding process, geometries and coatings. The last part of the puzzle was how to achieve the perfect edge hone on every tool they manufactured.



Their exact requirement was for a finishing system that could accurately and consistently apply a 10 to 15 micron hone to the cutting edges of their new thread mills.

Edge honing the tool prevents chipping and curling of the cutting edge to ensure the tool performs as it should and allowing it to run at full production speed from new.

They approached us because they knew our wet blasting machines had unparalleled levels of control for achieving the precise edge hone they needed and that our automation is capable of achieving that hone every time. Consistency is critical to them.

Thanks to its exceptional levels of controllability and automation, our Oncilla wet blasting machine is capable of achieving the required 10 to 15 micron edge radius every time to their Six Sigma standard.

Another important aspect of the Oncilla is its extensive automation. Operators can load a pallet of thread mills and the automated system then blasts, rinses, and dries the tools. It even loads the tools back into a pallet at the end of the operation.

The 10 to 15 micron edge radius applied to the thread mills delivers a 50% improvement in cutting performance, helping to ensure the new tool's commercial success.



Vapor matt Oncilla wet blasting machine

*Our wet blasting systems deliver distinct productivity and quality competitive advantages to our customers, because of this we are often asked to sign Non-Disclosure Agreements (NDAs) to keep our customers' details confidential. That is why we cannot include the name of the manufacturer in this case study.



Vapor matt, Robins Drive, Bridgwater, TA6 4DL, UK
 t +44 (0) 1823 257976 e sales@vapor matt.com