

# Efficient exotics machining

**Machining exotics, such as titanium and Inconel, can benefit greatly from correct coolant selection and Jemtech (UK) says Blaser has a new answer that delivers more. *Machinery* explains**

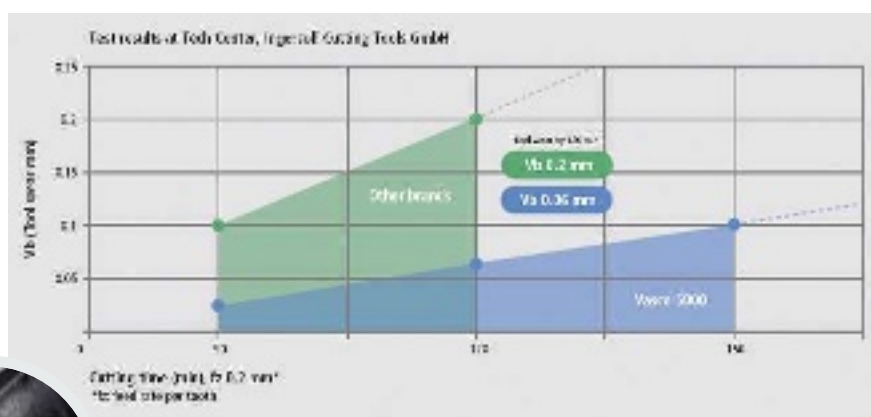
**M**anufacturing components from titanium demands specialist know-how, nowhere more than in the selection and application of cutting fluids. As sole UK agent for Blaser Swisslube AG, the Swiss-based manufacturer of high quality mineral and vegetable oil-based water miscible cutting fluids and neat cutting oils, Jemtech (UK) says it is well placed to provide that knowledge.

"Manufacturing industry is constantly looking for faster, more efficient, machining methods that will deliver components to the highest standard," says Steve Coull, Jemtech UK's managing director. "In aerospace, these pressures have to be balanced with the safety critical nature of the components being produced."

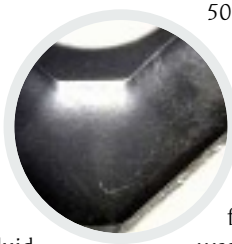
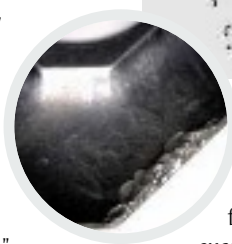
Making correct choices when machining exotics, whether it be machine tool, cutting tool or metalworking fluid, is vital.

Blaser has built up an extensive knowledge of the metalcutting fluid requirements of manufacturing industry. With its latest water miscible cutting fluid, Vasco 5000, it believes it has the solution to more productive and consistent manufacture of titanium components.

"Vasco 5000 is a high performance ester-oil-based product, which has been developed over several years," says Mr Coull. "The result is a cutting fluid that is optimised for the milling of titanium, Inconel plus Cr-Ni stainless steels, and it is one that delivers high levels of surface quality, excellent tool life and overall improved cutting tool performance."



Tool wear comparison – 150 minutes (bottom) using Blaser Vasco 5000 against 120 minutes (top) using conventional cutting fluids. The difference is clear



On a part manufactured from Ti6AL4V titanium, for example, the introduction of Vasco 5000 saw tool life increase from 120 to 150 minutes. At the same time, the customer was reporting much greater machine compatibility than he encountered with his previous fluid. The level of foaming from the Vasco 5000

was described as 'light', and what foaming did occur soon disappeared, whereas before this was being carried on the swarf out of the machining environment.

## BROKEN TOOLS

The improved cooling and lubricity provided by Vasco 5000 is also playing a major part in reducing, if not eliminating, tool failures, an area of great concern, particularly in the aerospace sector where a broken tool can have serious cost

implications on high value components.

Building on the success of Vasco 1000, which had high lubricity and cooling properties, the biggest challenge in aerospace applications is that of inadmissible corrosion and inadequate chemical stability. The importance of this is emphasised by the fact that the development of Vasco 5000 involved a team of 40 research engineers working on the project. In total, 1,500 different formulations were produced and 175 long-term stability tests were carried out in-house prior to numerous field tests being undertaken on customer components.

"It is this in-depth knowledge of cutting fluid development, combined with the application expertise of Jemtech (UK) and its team of engineers, that will allow UK manufacturers the opportunity to remain at the pinnacle of machining materials such as titanium and Inconel," Mr Coull concludes. □