

Faster machining speeds without the neat oil risks

Situation

A large US aerospace engine customer had three manufacturing plants using heavy duty, chlorinated neat oils to broach a variety of difficult to machine alloys, including Hastelloy, Inconel, Rene and various stainless steels. They sought a solution that would help to avoid the disposal and environmental issues that accompany using traditional neat oils as well as gain more throughput due to faster cut times. It was also desirable to improve the workplace environment by avoiding the mist and related health and safety issues.

Solution

Castrol® has successfully worked with customers seeking to change horizontal and vertical broaches from neat oil to water based cutting fluids. The lubrication properties of Syntilo® 9954 allowed faster cutting speeds which resulted in greater parts throughput and reduced cycle times. The broach life also increased, providing more parts per regrind and longer uptime.

Outcome

Castrol Syntilo 9954 is a water-based coolant that has successfully been used to bring substantial cost savings to customers. This technology allows manufacturers to avoid some of the negatives associated with neat oils while also experiencing savings in tooling, increased throughput, decreased cycle times, and fewer tool changes. The work environment and cleanliness issues were overcome and operator acceptance increased significantly.



Savings

- Increased RAM speeds >35 ft/min
- Decreased stroke time <15 seconds
- Reduced disposal costs and provided a cleaner work environment
- Improved HSE and operator acceptance