

Tool life extended by over 200% helps boost productivity

Situation

A leading US engine manufacturer faced numerous challenges in their operations - from frequent tool breakage to substantial rework while drilling and reaming heat-treated low carbon steel engine components. Their current metalworking coolant required a 20% concentration and they struggled to achieve a mere 12 minutes of tool life.

Solution

The manufacturer contacted Castrol® with the goal of finding a fluid that would extend tool life while also reducing coolant usage. The solution, Castrol Hysol AMG, an emulsion-based coolant boasting a high oil content and an enhanced EP (Extreme Pressure) package, specifically tailored for optimal steel machining. The recommended trial concentration for Castrol Hysol AMG was 9%, representing an immediate 50% reduction in coolant usage.

Outcome

Following the trial period, the tool life increased substantially to 40 minutes, equating to a remarkable 233% increase. Additionally, coolant usage was reduced by nearly 70%. The decrease in rework volume was equally noteworthy as fewer tools broke during machining, translating to reduced downtime and heightened production efficiency.



Savings

- Reduced operating costs (cost savings \$54,400 annually)
- Extended tool life by three times the current operation
- Reduced coolant usage by 69% due to lower concentration required