FOR CASTROL AND CASTROL CUSTOMER USE ONLY.
OTHER USES PROHIBITED. DO NOT FORWARD OR DUPLICATE.

Steel Crankshaft Machining Success

AUTOMOTIVE (USA)

ENGINES

Castrol Variocut® C 334

ANNUAL SAVINGS: $40,320

THE SITUATION

A major automotive manufacturer was seeking a more cost effective neat oil for their crankshaft oil hole drilling (deep hole drilling) operations. The fluid also needed maximum machining performance in order to help reduce tool breakage.

BEFORE

- Mineral based neat oil
- Usage – 7200 gallons per year
- Experiencing tool breakage
- Occasional sulfur odors
- Significant oil drag out on filter media

AFTER

- Castrol Variocut C 334 neat cutting oil
- Usage – annual reduction of 2,400 gallons (**33% reduction**)
- Odors were eliminated
- Initially, tool breakage remained the same but improved later through tooling investigation

THE SOLUTION

- The customer had good success with the previous mineral-based coolant but asked Castrol for any fluid options that could improve their process further.
- Variocut C 334 was recommended as the replacement fluid for their gundrilling operations.
- With a lighter viscosity than the competitor fluid, carry-off was minimized and filtration was improved.
- In addition, less oil drag-out was occurring on the filter media.
- The result with Variocut C 334 was no change in machining performance but a significant decrease in usage and elimination of odors.

- **Reduced coolant usage**
- **Eliminated odor complaints**

FOR CASTROL AND CASTROL CUSTOMER USE ONLY.
OTHER USES PROHIBITED. DO NOT FORWARD OR DUPLICATE.

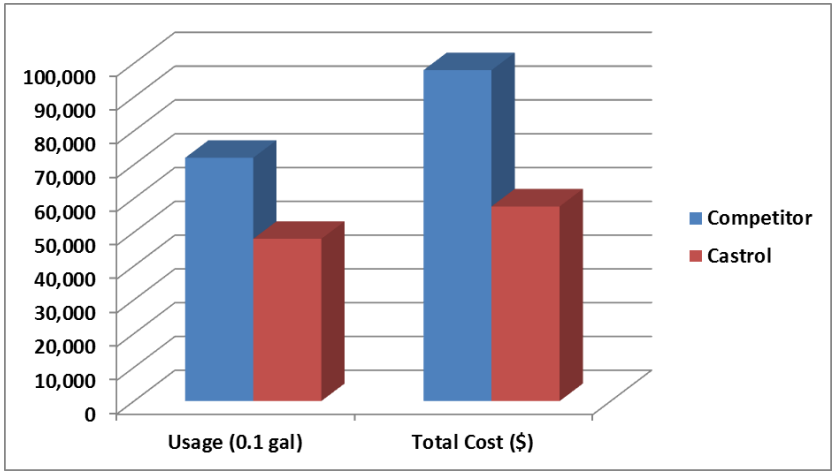
Steel Crankshaft Machining Success

RECOMMENDATIONS

The Castrol chemical management team had confidence that the Variocut C 334 would work well in this operation, due to their knowledge of the customer's process and expectations. This application utilizes an 11,000 gallon central system with PowerLOFT filter media. Carbide tooling with through-the-tool coolant is utilized for this operation.

CONCLUSION

With the Variocut C 334, the customer was able to reduce their coolant usage by over 30% without any disruption in their operations. Tool breakage was later improved through Castrol engineering identifying problems with the tool regrinding process.



OTHER POTENTIAL APPLICATIONS

Variocut C 334 is designed for grinding, drilling, and general machining of cast iron and alloy steels. Its low viscosity and excellent wetting characteristics reduce drag out, resulting in lower oil usage.

Castrol, the Castrol logo and Castrol Variocut are trademarks of Castrol Limited, used under licence.