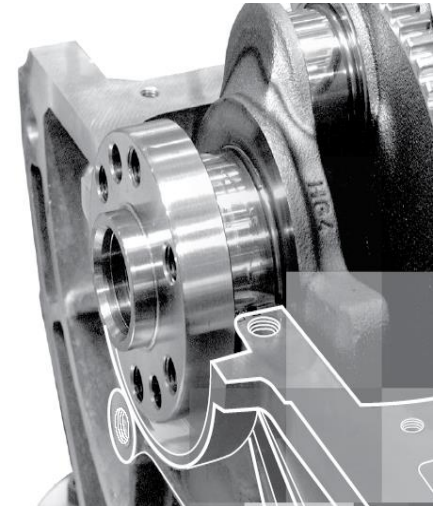


AUTOMOTIVE (USA) ENGINES

Castrol Hysol® AMG

Tool Life Improvement of 5X + \$10,340 Savings



THE SITUATION

A major heavy duty diesel engine manufacturer was seeking a coolant to provide improved tool life, biostability, and foam control to their operations.

The key focus area was the high insert usage and cost in the valve guide reaming operation on the 6-cylinder 2-valve cast iron heads.

In addition to the heads, the coolant had to be capable of handling molybdenum alloy machining from the same coolant system.

BEFORE

- Inserts on the valve seat finishing operation were changed 2-3 times per day (every 18 parts)
- Frequent additions of biocide
- Frequent additions of defoamer: 6 pails per year
- Emulsion splitting due to tramp oil

AFTER

- Inserts are now changed about 2 times per week (every 90 parts)
- Need for biocide eliminated
- Defoamer additions greatly reduced: 1 pail per year
- No emulsion splitting

THE SOLUTION

- Castrol's Application Engineers reviewed the operation in detail, utilizing their tooling expertise to determine the most suitable fluid.
- Castrol Hysol AMG soluble oil was chosen due to its high oil content, lubricity, and EP package while maintaining good biostability and foam control.
- Operators monitored the insert life and noticed a great improvement immediately.
- The concentration was dropped from 10% with the previous coolant to 9% with Hysol AMG while maintaining performance.

- Castrol experience and knowledge coupled with the right product
- Exceptional tool life without compromising fluid integrity

RECOMMENDATIONS

Castrol Hysol AMG has exceeded the customer's expectations with its ability to produce high quality parts and extended tool life like a soluble oil while maintaining foam control and biostability like a semi-synthetic.

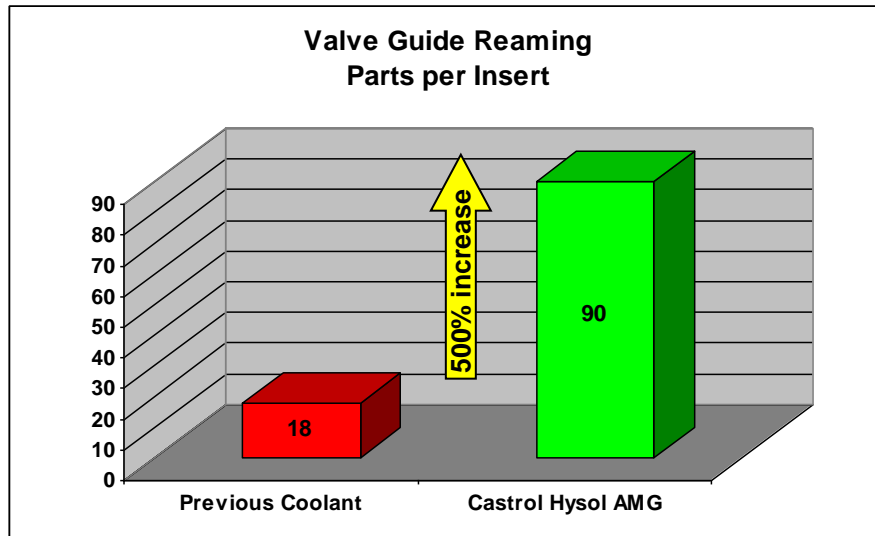
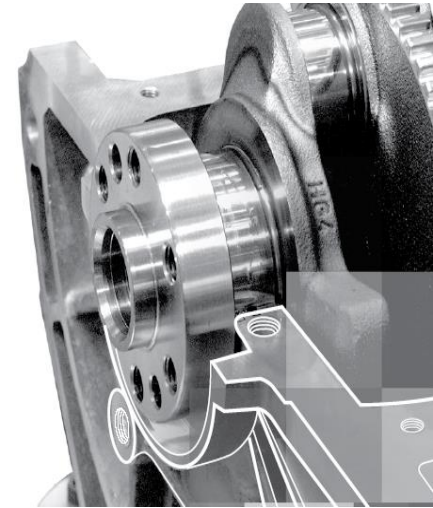
The tool life has increased by 5X while the use of biocide has been eliminated and defoamer has been reduced by over 80%.

CONCLUSION

The lubricity and EP package of the Castrol Hysol AMG proved extremely effective in the difficult valve guide machining operations, including the valve seat reaming where final surface finish is critical to quality and engine performance.

Due to the tremendous success in this application, the customer has expanded the use of Castrol Hysol AMG into other areas of the plant.

Total savings in tooling and additives is \$10,340.



OTHER POTENTIAL APPLICATIONS

Castrol Hysol AMG is an advanced soluble oil with high lubricity, optimum EP package, and excellent foam & bacteria control. It is well suited for applications with difficult to machine alloys, high metal removal rates, or any requiring exceptional lubrication.