QUAKERAL® 377

CASE STUDY – Heavy-Duty Aluminum Machining

METALWORKING INDUSTRY

Challenges

A major automotive transmission manufacturer was experiencing a number of issues with their metalworking fluid in the manufacture of the pump body:

- Negative impact on tool life
- Limited biostability resulting in decreased sump life
  - Bacteria
  - Fungi
  - Mycobacteria
- Odor issues resulting in operator concerns
- Fluid contained Triazine – a formaldehyde releasing agent

Providing Solutions

After conducting a detailed baseline study, Quaker introduced their QUAKERAL® 377 product, resulting in a significant increase in efficiency and productivity at the facility, while lowering the total cost to the customer. The product conversion resulted in:

- Elimination of mycobacteria
- Tool cost/unit decrease of nearly 22%
- $15,000 tool cost savings in the tapping process – a 37% reduction in tool cost!
- Coolant usage reduction of 40% - due to increased stability of product and increased bioresistance
- Chemical cost/unit decrease of approximately 21%
- Annualized chemical spend savings of $30,000 — a 14% reduction in chemical cost!
- Based on tool savings, coolant savings, biocide and tank-side additive reduction, there was an overall cost/unit savings of 5%

Customer Reference

Bosch
Consolidated Diesel
Chrysler
General Motors

Product Description

QUAKERAL® 377 is a high-performance emulsifiable metalworking fluid designed for heavy-duty machining and grinding operations requiring a high degree of lubricity, cleanliness, cooling and corrosion protection. It is recommended for more difficult machining and grinding operations on cast iron and steel alloys and for critical surface finish machining of cast aluminum alloys. This product is designed to control microbiological growth including mycobacteria.

Process & Equipment Info

Saginaw, Kingsbury, Kasper

Part:	Transmission Pump Body
Part Alloy:	390 Aluminum Alloy
Concentration:	4 - 6%
Specific Operation:	Rough turning, Drilling, Tapping and Reaming

Product and Process Expertise

Metalworking lubricants represent a very minor part of the costs in a metalworking process, typically less than 1%. This case illustrates the importance of correct fluid selection. The impact of the fluid can be a multiple of its costs, making the price of a metalworking fluid insignificant. That is why Quaker focuses on developing fluids with the highest performance without compromise, fluids that sharpen your competitive edge.