

## Challenges

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

- 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 34%
- Tool cost savings of 37%
- Coolant usage reduction of 31% - due to increased stability of product and increased bioresistance
- Chemical spend savings of 14%
- Chemical cost/unit decrease of 5%
- Overall cost/unit savings of 10%

## 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

### Giddings & Lewis, Enshu

<b>Part:</b>	Bell Housing
<b>Part Alloy:</b>	380 Aluminum Alloy
<b>Concentration:</b>	6 - 8%
<b>Specific Operation:</b>	Drilling 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.

