

## Challenges

A leading developer and manufacturer of marine and truck diesel engines suffered from the following problems in their cylinder block manufacturing:

- Excessive coolant usage
- Foaming of the coolant
- Poor sump life (6 weeks)
- Dirty machines

Quaker addressed this situation utilizing their extensive experience in the metal machining area by introducing QUAKERAL® 370, a heavy-duty, environmentally up-to-date, chlorine-free product. The use of in-house developed ester lubricant technology as a replacement for environmentally damaging EP additives, produced an immediate positive impact on the machining process.

## Providing Solutions

The use of QUAKERAL® 370 resulted in:

### Savings In Excess Of The Annual Coolant Costs

- Costs of drills reduced roughly 10% or £ 1,000.
- Sump life increased from 12 to 52 weeks. After 52 weeks, the system was changed as part of an annual clean-up, but there was no sign of deterioration of the fluid properties. General coolant usage also decreased. Together these savings amounted to £ 9,000.
- Disposal costs decreased £ 1,600 with approximately 40,000 litres less coolant dumped annually.
- Working conditions of operators improved due to cleaner machines and absence of bacterial and fungal infections.
- No foaming build-up.

## Customer Reference

- Bosch
- Caterpillar
- Cummins
- Chrysler
- Delphi
- Federal Mogul
- Ford
- GM
- INA Bearing
- Koyo
- Pratt & Whitney
- PSA
- Renault
- Toyota
- Volkswagen
- ZF Corp

## OEM Reference

- Alfing
- Deckel
- Excello
- Gehring
- Giddings
- Grob
- Heller
- Honsberg
- Lamb
- Makino
- Mapal
- Mazak
- Mollart
- Nagel
- Toyota
- Varinelli

## Product Description

QUAKERAL® 370 is based on advanced ester technology and suitable for machining titanium, aluminium, steel, alloy steels and cast iron. QUAKERAL® 370 can be used on all general metalworking applications as well as arduous operations such as:

- Broaching
- Gun drilling
- Mapal reaming
- Tapping
- Creep feed grinding
- Hobbing
- Turbine machining
- Neat oil replacement

## Process & Equipment

	<b>FMY 2500</b>
Part:	Cylinder Block
Part Alloy:	Cast Iron
Concentration:	10%
Pressure:	15 bar maximum
Specific Operation:	Gun Drilling

## Product & 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.