CASE STUDY

Machining and Grinding:
66% Oil Consumption Reduction

QUAKERCUT® 010 XP

The Challenge

A manufacturer of transmissions for heavy-duty vehicles was using a mineral oil-based oil for its grinding operations. The main challenge the customer wanted to address was skin and respiratory irritation of operators. Additionally, the customer wanted to improve other parameters:

- Oil drain interval (the previous supplier recommended a 12 month oil change interval)
- Oil consumption
- Filter cleaning

The Solution

Binol, a Quaker Houghton Company, introduced QUAKERCUT® 010 XP, an extra high performance neat cutting and grinding oil to replace the mineral oil in the systems.

The Product

QUAKERCUT® 010 XP is an extra high performance neat cutting oil based on advanced ester technology from renewable raw materials, designed for metalworking operations, with a viscosity of app. 11 mm²/s at 40°C. High polar additives gives optimal wetting and lubricating properties ensuring high surface finish quality and improved tool life. The product should be used neat. Its main application is heavy-duty metalworking operations.

The Benefits

After using QUAKERCUT® 010 XP the customer realized the following benefits:

- The manufacturer realized a total cost savings of 5.400€ per year per machine
- No skin or respiratory irritation was reported by operators
- Operators reported "softer" skin and reduced skin dehydration

A study was performed and Binol was able to show the following operational improvements:

MAIN BENEFITS	IMPROVEMENTS
Oil mist	Down from > 1 mg/m³ to < 0.05 mg/m³
Oil change	None for 12 years. Only topping-up
Oil consumption	-66%
Filter cleaning	From once every 2 weeks to once every 3 months

Process and Equipment

PRODUCT TITLE	PRODUCT INFORMATION
Operation	Grinding
Machine	Junker Quickpoint 5002
Material	Steel, hardened high-alloy
Type of abrasive	CBN (140m/s)
Pump pressure	20 - 80 bar
Filter	Containing corn flour
Cycle time new	2 - 2.75 minutes
Running time	24 hrs/day
Tank volume	3,000 L
Adjustments	None

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