

CASE STUDY



WORM GEAR GRINDING QUAKERCUT® 026 PEJ

CHALLENGES

A major steering component manufacturer was experiencing excessive scrap issues in their critical worm gear grinding operation. The plant could not meet the surface finish requirements requested by their customer and a corporate mandate restricting chlorinated paraffin use in metalworking fluids was issued. The plant requested the following from their Quaker Chemical Management Services (QCMSSM) program:

- » Present a product that could meet the required surface finish specifications
- » Discontinue use of the current chlorinated product and move to a chlorine-free technology

THE SOLUTION

Quaker analyzed the customer's challenges and developed QUAKERCUT® 026 PEJ, a heavy-duty machining and grinding neat oil. QUAKERCUT® 026 PEJ was successfully trialed in the worm-gear grinding machines side by side against the previous competitive chlorinated neat oil. By switching to QUAKERCUT® 026 PEJ, the customer was able to achieve the following results:

- » **Met the surface finish requirements**
- » **Saved the plant \$240,000/year by reducing scrap**
- » **Eliminated the use of chlorinated paraffin**

Daryl Adams, Quaker Lead Product Manager, North America Metalworking stated, "with the success to formulate a non-chlorinated lubricant, Quaker was able to proactively migrate their customer away from a technology (Chlorinated Paraffins) that potentially may be banned by the EPA in 2017."

PROCESS AND EQUIPMENT

Material	S43C Steel
Machine	Nachi grinder
Filter	Cyclonic and magnetic separators
Tank Volume	165 gallons
Pump Pressure	60 psi
Type of tool	Norton grinding wheel 110 grit
Operation	Worm gear grinding

THE PRODUCT

QUAKERCUT® 026 PEJ is a heavy-duty machining and grinding oil that provides a high degree of lubrication. It is suitable for use on all grades of steel, including difficult to machine high-nickel alloys. This product contains a synthetic ester and a unique non-sulfurized and non-chlorinated extreme pressure additive. QUAKERCUT® 026 PEJ is recommended for heavy duty machining including tapping, plated CBN grinding, gun drilling and worm gear grinding.

THE 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.



Worm Gear Grinding