

### Challenges

An automotive parts manufacturer in India was looking to improve tool life and reduce oil consumption in its crankshaft manufacturing operations. The manufacturer had two gun drilling machines, each with a 300-liter tank.

To improve the manufacturer's operations, Quaker recommended switching to QUAKERCUT® 010 ES, a straight cutting oil which would offer significantly improved tool life as well as increased cost savings. By making this change, the manufacturer nearly doubled its tool life and reduced total costs by 26% (including top-up cost and downtime cost) – resulting in a total cost savings of Rs 184,500 (USD \$4,100) per year/machine.

### Providing Solutions

Quaker introduced QUAKERCUT® 010 ES in one gun drilling machine, requiring 300 liters of straight cutting oil. After a trial period of two months, Quaker was able to show – on an annualized basis – 1.8% savings in oil cost and 40% increase in tool life. The tables below show detailed cost savings information.

Oil cost/machine (liters)	Competitor	Quaker
Oil required for first fill	300	300
Daily oil top up	2.5	1.5
Monthly oil top up	62.5	37.5
Annualized total oil consumption	1,350	1,050
<b>Annualized savings in oil cost</b>		<b>Rs 4,500</b>

Tooling cost/machine (Rs)	Competitor	Quaker
Tool type	Solid Carbide Drill	Solid Carbide Drill
Tool dimension	6.35MM X 600MM	6.35MM X 600MM
Re-sharpening frequency	400	750
Total tool life	4,000	7,500
Number of tools required/month	5	3
Cost of each tool	7,500	7,500
<b>Annualized savings in tool cost</b>		<b>Rs 180,000</b>

In addition, by changing to QUAKERCUT® 010 ES the manufacturer experienced improved machine cleanliness, rust protection and bio-stability. And because this is a non-chlorinated product, it is more user-friendly (no skin irritations) and eco-friendly. Finally, by changing to this straight oil, which had better lubricity than their previous product, there was less burning of oil and therefore less smoke – resulting in a better work environment for employees.

Based on positive results of the trial, the manufacturer switched to QUAKERCUT® 010 ES in both gun drilling machines in the facility.

### Product Description

QUAKERCUT® 010 ES is a medium-to-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 synthetic ester and new, non-chlorinated extreme pressure technology.

### Process & Equipment

<b>Part:</b>	Connecting rod
<b>Material:</b>	Steel
<b>Machine Size:</b>	300 liters
<b>Part Alloy:</b>	Steel 4140 & Steel 4340
<b>Application Pressure:</b>	Simply being poured over the component by a small pump.
<b>Filtration System:</b>	Paper band filter
<b>Specific Operation:</b>	Oil hole 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.