

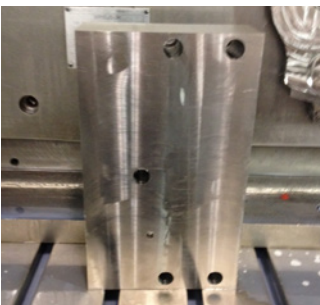
## Aerospace Titanium Machining : 150% Increase in Tool Life

HOCUT® 4940

### The Challenge

A leading engineering service provider specializing in the design and manufacture of solutions for Aerospace OEMs and Tier I suppliers (e.g. Airbus, BAE Systems, Bombardier) was looking to improve operations.

New contracts required undertaking more frequent and arduous titanium work. This resulted in machining and tooling difficulties, particularly in a plunge milling on titanium blocks, even at 15% coolant concentration.



Milling Operation on a Titanium Block

The company needed to make improvements in their machining operations. They were losing an average of one hour of productivity for each roughing cycle (4 hours lost machining time/ 24 hours).

There were also issues with corrosion on machine tool beds with seals and coatings breaking down.

Coolant usage per machine tool was 1 drum of coolant per 2 weeks at an annual cost to the business of nearly \$22,000 per machine tool.

### The Solution

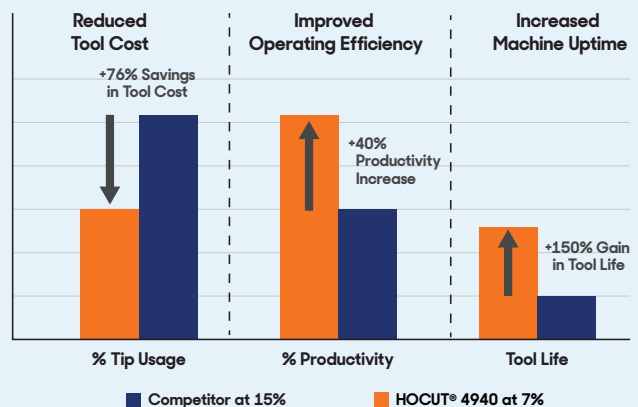
To overcome their difficulties, Quaker Houghton recommended HOCUT® 4940 coolant with advanced lubricity and excellent wetting properties. HOCUT® 4940 provides superior cutting performance and reduced tool wear enabling the customer to better execute titanium machining with both lower cost of operation and higher productivity.



A DMC 100H Machine 4 was chosen for the trial. The HOCUT® 4940 concentration was set initially at 9% and then reduced to 7% as the anticipated performance benefits were achieved.

### The Benefits

- 150% increase in tool life: 20 minutes to 50 minutes. Less downtime, and lower running costs
- 40% increase in productivity: Cycle time reduced by increasing feed rate saving 22 minutes per lateral cutting set. 1.5 hour reduction in machining time per component: 3.75 hours to 2.25 hours
- Reduced maintenance: Corrosion-free machine tool beds, seals, and coatings. Fewer tool changeovers per shift
- Reduction in coolant concentrate usage: From 15% to 7%



Coolant consumption reduced 85% from 25 drums to 4 drums per year per machine resulting in \$17,000 cost savings per year per machine

### The Product

HOCUT® 4940 is a global heavy duty metal removal product for machining and grinding a wide range of materials. It has outstanding biostability, is clean running with low foam and high detergency. It provides corrosion protection, inhibits aluminum staining and affords good lubrication for machine ways and indexing mechanisms.

