CASE STUDY

Aerospace Titanium Machining :
60% Cost Decrease of Fluids and Elimination of Foam

HOCUT® 795 B

The Challenge

An aerospace company was machining Ti elements with large tool machine park, consisting of 5-axis gantry profilers from MAG Industrial Automation Systems.

The central cooling system was filled for over 10 years with a competitive coolant used at 7-10%.

The average coolant service life is only one year for these high pressure applications and mainly with fresh emulsions foaming is reported.

Regular additions (every 3 weeks) of anti-foam agent as well as bactericide (Grotanol SR2) prevent potential over-flow and filtration issues, but impact consequently the fluid and maintenance costs.

The Solution

Quaker Houghton proposed HOCUT® 795 B, dedicated to Aerospace parts machining and well established for its long sump life and good stability.

The customer began a trial with HOCUT® 795 B on a Mega 5 (MAG) milling tool machine. After 2 years HOCUT® 795 B was still in use, and there has been no sump clean-out and no anti-foam nor bactericide addition.

- Concentration set at 7,5%
- No problem reported since tank fill
- No foaming despite applying high pressure (>70 bars)
- Machine cleanliness improved (absence of sticky oil residues) - while tool life and part quality remain unchanged.

Consequent savings were generated on global fluid costs, leading customer to adopt HOCUT® 795 B.

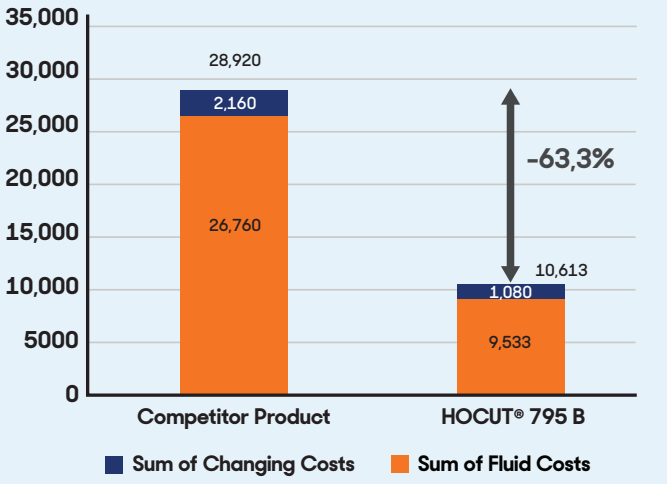
The Product

HOCUT® 795 B is a versatile, heavy duty, chlorine-free, soluble metal removal fluid specially formulated to machine Aerospace grade aluminum alloys. HOCUT® 795 B is compatible with hard water, clean running and biostable assuring long, odor-free sump life. It provides high corrosion protection without staining. HOCUT® 795 B is approved for all usage areas defined in BAC-5008, NASA, Sikorsky Helicopter, UTC Aerospace, Vought Aerospace, Pratt & Whitney and Bombardier.

The Benefits

- 1,1 k€/y savings was achieved through an over 100% increase in bath life (>2 years), a 50% reduction in clean outs and reduced maintenance costs
- 4,5 k€/y fluid cost savings was achieved from a 86% reduction of anti-foam and biocide additives, and limited system cleaner
- A 12,7 k€/y savings was achieved with a 56% reduction in cutting fluid costs as a result of lower concentrations and fewer refills, less water use and lower fluid disposal costs

Total Costs (€/year)



HOCUT 795® B GENERATES 18,3 K€/YEAR SAVINGS (-63%)

Quaker Houghton
Forward Together™