Aerospace

Case Study: Precision Machining Operation Doubled Productivity with TRIM® HyperSol® 888NXT

Brought To You by Master Fluid Solutions | Jan 16, 2024

For over two decades, a Silicon Valley-based manufacturer has provided precision machining services in the aerospace, defense and medical industries, as well as for global original equipment manufacturers (OEM). The manufacturer excels at short- and long-run production, making high-quality prototypes for various engineering projects.

THE CHALLENGE

The manufacturer has 12 machines on-site for milling, turning, and five-axis machining operations. Workpieces include 17-4 stainless steel - a challenging grade that contains 15 to 17 percent chromium, three to five percent copper, and three to five percent nickel - and Inconel®, a durable nickel and chromium alloy used for aerospace applications.

The high-lubricity, machine-friendly characteristics of TRIM® MicroSol® 585XT allowed the manufacturer to maintain a long sump and tool life with an impressive throughput of 16 to 18 parts per hour.

They were also seeking a simple method to further improve productivity while reducing fluid consumption. Therefore, Master Fluid Solutions® identified a coolant upgrade as the best plan of action.

THE SOLUTION

The customer transitioned to the advanced TRIM HyperSol® 888NXT, Master Fluid Solutions'® first patented neo-synthetic coolant. Previous metalworking fluid categories include straight oils, emulsions, semi-synthetics, and synthetics. Each category is recognized for their unique strengths and weaknesses in regards to cooling and lubricity. HyperSol 888NXT stands out with its unparalleled cooling and high lubricity — a combination that's never been achieved in a single cutting fluid. HyperSol 888NXT provides exceptional performance on hard aerospace metals, such as titanium and high nickel alloys, stainless steels, and Inconel, which are all used daily in the customer's operations. Certified as a USDA Biopreferred cutting fluid, HyperSol 888NXT also improved the customer's environmental footprint.

THE RESULTS

After 45 days of use, and changing nothing except the coolant used in their operation, the aerospace, defense, and medical equipment manufacturer more than **doubled** the throughput of stainless steel from 16 to 18 parts per hour to between **36** and **40** parts per hour. Coolant consumption also decreased drastically because TRIM HyperSol 888NXT requires lower concentrations and makeup rates.

The Silicon Valley manufacturer has ordered additional drums of the new HyperSol 888NXT for use in its Inconel machining operations.

THE NUMBERS

- Increased productivity by over **100%**
- ⁋Fluid consumption and makeup rates reduced
- Doubled production throughput from 18 parts per hour to **36**

⁋Previously Featured on Master Fluid Solutions' website.

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