Better Swiss Machining at Defense Contractor

Situation

Customer is a military and aerospace supplier machining small stainless steel, copper, titanium and Inconel fasteners in high-speed Swiss CNC machines. Parts and machines had residues and some yellow metals were staining. Operators complained about mist and smoke, and the plant had experienced fires in the past. A high amount of oil carry-off on the parts equated to vigorous parts washing with solvents and a large volume of oil make-up.

Solution

Castrol Performance Bio NC Ultra Lite EP was tested in two machines to prove machining performance, part finishes, cleanliness and operator acceptance. Tight tolerances and critical RMS finishes meant the need for a high-performance fluid that would accommodate a wide variety of materials.

Outcome

Test machines performed exceptionally well. Results showed reduced mist and smoke which pleased the EH&S manager. Tool life was as good or better than the conventional cutting oil. The lower viscosity of the Castrol fluid meant improved cooling at the point-of-cut and lower oil carry-out, which improved the parts washing process. Operators loved the clear and odorless nature of the fluid and could now see their parts through the machine windows. The chip spinning operation was improved, since the chip bins had less oil to be separated.

- Oil usage reduced by 20% (10 gal per machine) for $12,500 annual savings
- Parts and machines are cleaner
- Risk of fire greatly reduced
- Parts washing is easier
- “Operator morale has never been higher”