Defense contractor realizes improved Swiss Machining

Situation

A US military and aerospace machining supplier used a high-speed Swiss CNC machine for small stainless steel, copper, titanium and Inconel fasteners. They observed parts and machines had residues and some yellow metals were stained. Operators also 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

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

Outcome

In test, the machines performed exceptionally well, showed reduced mist and smoke. 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. Operator acceptance was positive and the clear and odorless fluid made it easier to see the parts through the machine window. The chip spinning operation was also improved, since the chip bins had less oil to be separated.

Savings

- Reduced oil usage by 20%
  (cost savings $12,500 annual)
- Improved cleanliness of parts and machines
- Reduced risk of fires and improved safety
- Increased acceptance by operators and HSE