

# CASTROL PERFORMANCE BIO NC LITE HELPS SUNDWIGER EXTEND TOOL LIFE BY 600%

## How Castrol Performance Bio NC Lite is helping Sundwiger increase productivity and set high standards in the manufacture of precision parts.

Having already built a strong reputation for machining brass components, Sundwiger Drehtechnik GmbH is now carving a niche as producer of high quality precision parts in stainless steel and other steel types. Castrol Performance Bio NC Lite, a plant-based neat cutting oil, plays an important role in helping Sundwiger to increase productivity, set high machining standards and satisfy its expanding customer base.

Replacing its aging Computer Aided Manufacturing (CAM) controlled lathes with automatic Computer Numerical Controlled (CNC) lathes enabled Sundwiger to open up new opportunities for machining stainless steel and other steel types. However, expanding their milling and turning capabilities the company not only generated more customers, it also created new challenges. For Managing Directors Andreas Paul and Dirk Graewe, switching from brass to steel and stainless steel was a difficult process, involving retraining staff in the use of new machinery and lubricants, but it was essential for the company to remain competitive.

Sundwiger produces parts for many industries, including hydraulics, automotive manufacture, and control engineering, but the around 60 percent of Sundwiger's business comes from the sanitation sector. Grohe AG, Europe's largest manufacturer of sanitary fittings, including kitchen and bathroom faucets/taps and shower systems, is located close to Sundwiger's plant and is a major customer. Germany's new Drinking Water Ordinance, introduced in 2011 has driven a move to use lead-free materials in sanitation, and the company needed to be able to produce components in a variety of metals. By introducing the new machining technology and working with a broader range of materials, Sundwiger was able to adapt to the changing market demands but there were cutting fluid challenges to be met.

## Combatting downtime and poor surface quality

The machine tools in the Sundwiger plant used a conventional ISO 32 neat oil supplied via a 20m<sup>3</sup> centralised sump. When a job called for steel to be machined a different cutting oil had to be used. This meant that operators had to shut down the machine to switch fluids. During this time the machine was unproductive and there was an added risk of oil in the centralised system becoming contaminated by the new oil which could cause black spots to appear on machined brass parts. The dual challenges of reduced tool life and compromised surface quality was a concern for the two owners who asked their lubricant supplier, Castrol partner Orosol Mineralölvertrieb GmbH, to suggest potential alternatives to evaluate, among these was Performance Bio NC Lite from Castrol. Performance Bio NC Lite is part of Castrol's next generation plant-based oil range which has been developed specifically to reduce many of the in-use problems often associated with traditional mineral oils and existing plant-based

## Immediate improvements observed – tool life extended by six times

From the very start of the evaluation, Performance Bio NC Lite impressed Andreas Paul. "We immediately noticed that there was hardly any wear on the tool," he explains. In fact, the results were so impressive that the life of one nipple head drill used to machine 80mm deep into stainless steel grade 1.43.01 was extended by over 600 percent. "When we started using Performance Bio NC Lite on this particular stainless steel nipple drill, we increased production from 500 work pieces to 3000 during one tool life," says Mr Paul.

Handling chips, the pieces of metal debris that result from machining metal, is a common problem affecting the performance of machine tools, particularly in multi-spindle CNC machines like those used by Sundwiger. Flowing chips – long, often spirals of metal – can seriously affect the performance of machines and cutting fluids need to be able to remove



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Managing Director, Sundwiger Drehtechnik



## HIGHLIGHTS:

- Tool life extended from 500 to 3000 machined parts
- Chip breakage considerably improved
- Major reduction in machine stoppages during runs
- Capacity utilization and productivity improvements

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### Lower running costs without compromising quality

As well as increasing usable tool life and the availability of machine time, Performance Bio NC Lite returned other advantages including a reduction in drag-out compared to previously tested products and a reduction in the amount of handling required. The risk of neat oil contamination was also eliminated, which has helped to preserve the surface quality of finished pieces. The company's 160-strong workforce has also benefitted from the elimination of unpleasant odours from the previously used metalworking fluid and Performance Bio NC's low-misting characteristics.

### Performance Bio NC Lite helps open new opportunities

The advantages that Performance Bio NC Lite has delivered to Sundwiger are certainly appreciated by Andreas Paul. Alongside higher productivity and increased machine tool availability, Sundwiger also benefits from a massive extension in tool life and much better chip handling. These benefits are felt by the company in terms of lower running costs and also an expansion in product portfolio, which means that Sundwiger can bid for new contracts that would previously have been outside of their capability. For Andreas Paul the outcome of the recommendation by Orosol and Castrol has been very positive; "We have obtained real advantages from Performance Bio NC Lite, and we are very satisfied with the product. The test ran very well and we received professional and customer oriented support."

Thanks to Castrol Performance Bio NC Lite, Sundwiger can continue to extend its machining portfolio and now has the flexibility to cover all customer requirements – key considerations for a company in the highly competitive, precision machining environment.



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Andreas Paul,  
Managing Director, Sundwiger Drehtechnik



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