Multi-port valve blocks: Continuous disinfection of cooling lubricants and cutting fluid

Process description

In the metalworking industry, cooling lubricants and cutting fluids are essential for machining processes to avoid any change in the structure of the tools and materials. In addition to water and oils, these also contain additives such as anti-foaming agents, stabilizers, emulsifiers and anti-corrosion additives. To allow the cooling lubricants to be used for longer, they are treated and cleaned using methods such as filtration.

After an extended period of use, water-soluble cooling lubricants often become tainted with bacteria or fungi, which results in a strong odour and also impairs the function of the cooling lubricant fluid, among other problems. This also represents a significant health risk for production staff. In order to avoid this, in cooling lubricants biocides are often used as a preservation agent - but these also carry a health risk themselves. Staff who breathe in the aerosols can suffer from breathing difficulties, inflammation, irritation and allergic reactions.

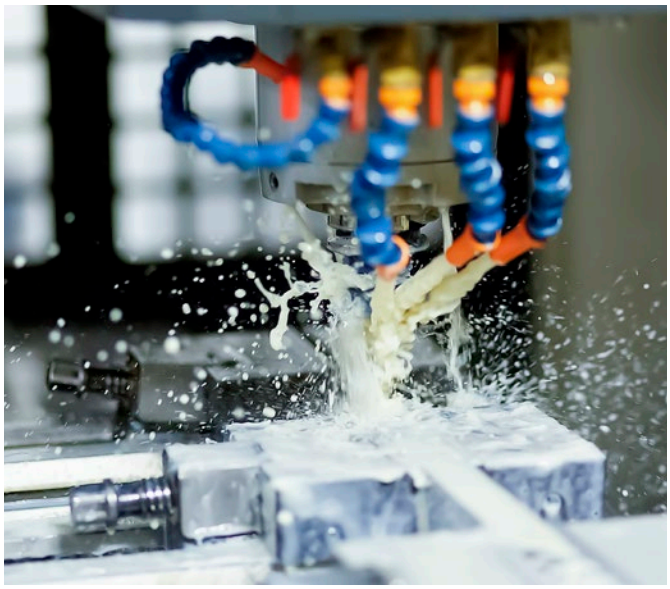

Photo-by-line: Wallenius Water
Cooling lubricant fluid used in metalworking

New procedure for biocide-free disinfection

The Swedish environmental engineering company Wallenius Water offers a chemical-free treatment process to protect against micro-organisms in cooling lubricants and cutting fluids. The system consists of a combination of UV disinfection and oxidation. This reduces the bacteria in the cooling lubricant fluid without the formation of any hazardous by-products.

Advantages of the system

Continuous monitoring and treatment of the cooling lubricant fluids reduces the bacteria on an ongoing basis. This extends the service life of the cooling lubricant fluids and prevents the formation of odours, while at the same time also protecting people and the environment through the omission of chemicals.

GEMÜ solution

A multi-port valve block from GEMÜ is used in the latest generation of this CIP installation. It is used to transfer and distribute all of the important media accordingly: the disinfected fluid, the cooling lubricant fluid or cutting fluid and the wastewater.
With this solution, Wallenius Water is able to build a much more compact systems for its customers. The location of the valves and their interconnections eliminate the need for additional pumps, which is of enormous financial benefit to the customer.
Added to this are the usual advantages associated with a multi-port valve block: as a fully assembled, customized unit, it can be integrated into the system very simply, which saves installation time. Furthermore, the number of pipelines and fittings is reduced, as is the number of welded and solvent cemented joints, which significantly improves system reliability by avoiding potential points of leakage.

GEMÜ multi-port valve block

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Gert-Müller-Platz 1 · 74635 Kupferzell · Germany
Phone +49 (0)7940 123-0 · info@gemue.de