

# Submersible pumps for vacuum filtration

THIS USEFUL INSTALLATION CONCEPT FROM THE BÜRENER MASCHINENFABRIK (BMF) HAS ALREADY WON OVER SEVERAL COMPANIES IN THE MACHINE TOOL INDUSTRY: THE INTEGRATION OF A COIL-TYPE SUCTION FILTER DIRECTLY IN THE COOLANT TANK MEANS THAT THE OVERALL COOLANT CONDITIONING EQUIPMENT IS VERY COMPACT, WITH THE PURIFICATION TANK NO LONGER REQUIRED. ONE OF THE MAIN COMPONENTS OF THE CONCEPT IS A MODIFIED IMMERSIBLE PUMP FROM GRUNDFOS.

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**TOPIC:**

Innovative solution - Low-maintenance system - Compact installation

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**LOCATION:**

Bürener Maschinenfabrik (bmf)

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**COMPANY:**

Grundfos

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## THE COMPANY

For more than 40 years, the Bürener Maschinenfabrik GmbH (bmf) has been providing the industry with products and installations for delivery, filtering and conditioning systems as well as components and plastic parts. The slogan "Technik mit Ideen" (technology plus ideas) is the order of the day, the 250-strong company is developing more and more innovative solutions.

## THE SITUATION

The machine tool industry requires space-saving solutions. On this basis, bmf developed the concept of a new cooling lubricant processing installation: the idea is based on a high performance coil-type vacuum filter directly in the coolant tank ("dirty tank"). For the immersible pump which is also to be installed in the tank, the following load profile was prepared: A very compact design, yet with adequate performance to draw the cooling lubricant that has been contaminated with chippings and other particles that have been worn off in the metal processing operation, through the filter

by means of a vacuum. The pump must bring the clean cooling lubricant on to the machine tool at the required pressure.

#### THE SOLUTION

For the new filter installation, Grundfos, working together with bmf specialists, has developed a new submersible pump model: the SPK 2-23/23. So what is new about this model?

The most noticeable thing is the vacuum adapter for vacuum filtration; these vacuum adapters are now available for all immer-sible pumps from Grundfos

The inlet strainer that is common in pumps for cooling lubricants is no longer there because these pumps are always placed after the filter and only take in clean medium

The pump hydraulics have been further improved: the immersible pumps do not just draw very well (up to  $-0.4$  bar negative pressure is possible), they also bring the clean cooling lubricant to a pressure of up to 7.0 bar (SPK 2-23/23), and a maximum of 20 bars is possible (CRK, MTR series)

The optional Harting plug simplifies the electrical connection of the pump (no electrician required).

And, because of the special filter technology in this immersible pump, no speed regulation is required either: because of how they normally work (the filter surface becomes loaded over time, so that higher speed = higher pressure is constantly required), normal filter pumps are often designed with speed regulation. Coil-type vacuum filters from bmf do not have any filtering equipment and therefore, because of their design, do not become fouled in this way, so speed control for the filter pump can be dispensed with.

#### THE OUTCOME

The dual function of the pump has several benefits for the user: The purification tank, and the pump to go with it, that are usually needed are no longer required. This compact filter construction therefore needs less space, saves money and is it's also extremely low-maintenance. bmf division head, Heinz Ahlke: "the compact installation has proven its practicality in several reference projects in the machine tool industry. In future we will be using the new coolant conditioning system across the board".

It was also important that, as an international manufacturer, Grundfos already had its own sales and service organization with subsidiaries in more than 50 countries: "the supply of spare parts is therefore en-sured on all of the main markets – our customers, who are all inter-nationally based, appreciate that."

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