

# Constant pressure for machine tool

THE MAYFRAN COMPANY, WITH MORE THAN 1000 EMPLOYEES WORLDWIDE AND PRODUCTION SITES IN THE UNITED STATES, EUROPE AND ASIA, IS ONE OF THE LEADING GLOBAL MANUFACTURERS OF CONVEYOR AND FILTRATION SYSTEMS FOR THE METALWORKING INDUSTRY.

Mayfran's reputation throughout the world is evident in this current project: N3 Engine Overhaul Services ( joint venture of Lufthansa Technik AG and Rolls-Royce plc) has established a plant in Arnstadt, near Erfurt, for the reconditioning of Rolls-Royce power units.

N3 assigned Mayfran with the planning and installation of a central cooling lubricant filtration system for the supply of eight machine tools with water soluble cooling lubricants. The central system (band filter installation) is located in the basement and supplies the machine tools with up to 500 l/min cooling lubricants in 3-shift operation, six days per week. Regardless how many machine tools are simultaneously running, each machine tool must be continuously supplied with cooling lubricants at a pressure of 3 bar.

To meet this requirement, the filter installation is equipped with two immersible Grundfos pumps (change in 24-hour rhythm). The units of the MTRE series selected by Mayfran feature frequency controlled motors.

Special characteristics of this series:

The cartridge mechanical seal can be replaced without disassembly of the pump Flexible immersion depth: Pump length can be adjusted to installation conditions A suction cycle protects the pump against dry running. Pump parts made of stainless

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TOPIC:

Immersible pumps with  
frequency converter

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LOCATION:

Netherlands

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COMPANY:

Mayfran GmbH, Netherlands

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steel, optimised suction chamber and impellers Leak channel to tank Energy-efficient high performance motor (EFF1).

The reason for selecting a speed-controlled variant is explained by Dipl.-Ing. Klaus Bock, who is in charge of sales support at Mayfran:

*“The maximum required by all eight machine tools together lies between 400 and 500 l/min cooling&nbsp; lubricant. The duty pump must be designed for this. However, when for instance only two machine tools are running, the requirement decreases accordingly – and the pump automatically reduces its speed. Important: The pump still delivers the same pressure!”*

This is necessary to ensure proper function, since the cooling-lubricant must be fed to each machine tool at 3 bar.

Advantage of this operation: Significant energy savings (reduced operating costs), as well as a technologically advantageous aspect: If the pump operates at reduced speed, the heat output to the cooling lubricant is also less, thus no separate cooler must be switched on.

Why the cooling lubricant must not heat up? Klaus Bock: “Especially the grinding machines are very sensitive to temperatures and require a preferably constant cooling lubricant temperature for processing a workpiece within the specified narrow tolerances.