Press Release

Everything you need, everything networked - the radically new hydraulic power unit for machine tools

Decentralized intelligent hydraulics from Rexroth increases energy efficiency and fits seamlessly into Industry 4.0 concepts

The compact power unit integrates with all machine tool concepts in a space-saving manner.

The progress is demonstrated not least by the elegant form: The new small power unit CytroPac from Rexroth shows how small the installation space is that is required by modern hydraulic solutions. Rexroth integrates hydraulic components with a frequency converter, motor, pump and sensorics in one housing to form a cabinet-free power unit. Being a plug-&-run solution, the new series simplifies commissioning and reduces energy consumption by up to 80 percent thanks to speed control in line with demand. At the same time, the decentralized, intelligent hydraulic power unit senses all operational states and fits into Industry 4.0 concepts with condition monitoring options. CytroPac covers the power range up to 4 kW and flows up to 35 l/min.

Installation space is valuable in machine tools, for the footprint is a buying decision criterion for operators. The hydraulic power unit CytroPac newly developed by Rexroth integrates all hydraulic and electrical components within a minimum of space. The downsized tank, the capacity of which was
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reduced to 20 liters, greatly contributes to these smaller dimensions. It ensures correct degassing of the oil and thus prolongs the service life of the fluid.

Energy consumption cut by up to 80 percent

CytroPac is based on the Sytronix drives from Rexroth. The integrated frequency converter automatically controls the motor speed according to the current demand. Compared with constant power units, this reduces the energy requirement by 30 to 80 percent depending on the cycle characteristics, while the power output remains unchanged. This helps machine manufacturers comply with the European Ecodesign Directive 2009/125/EC on energy consumption and CO2 emissions as well as the partially even more exacting requirements of the automotive industry. At the same time, speed control in line with demand reduces the heat input into the oil, thus reducing cooling requirements. In addition, Rexroth integrated the heat pipe technology - an innovative, space-saving solution for cooling by means of water.

As decentralized intelligent unit, the frequency converter, which is integrated in the housing, communicates with the machine control over the common real-time Ethernet interfaces Sercos, PROFINET, EtherCAT, EtherNet/IP, and Modbus/TCP as well as PROFIBUS. For commissioning, merely the connections to the power supply and the communication with the control as well as to the hydraulic circuit and the cooling water circuit have to be made.

Networked via open interfaces

CytroPac is already designed for increased information demands of Industry 4.0. Its core is the integrated frequency converter: Ready-to-use, wired to sensors for pressure, temperature, oil level, clogging and flow, it provides the machine control with all data over a Multi-Ethernet interface. Since operational states are continuously acquired, wear and faults can be recognized at an early stage and quickly be eliminated. Moreover, operators can change pressure and flow over the Ethernet connection in real time - irrespective of their location.

The housing insulates all sources of noise to the outside. Machine manufacturers no longer require additional, space-consuming and expensive housings in order to comply with international and automotive regulations with regard to permissible noise emissions. The small power unit features protection class IP 54.
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