Efficient, intelligent, compact and quiet
New hydraulic power unit saves space and energy in forming technology

- Compact control cabinet format
- Energy savings of up to 80 percent
- Condition monitoring and data analysis

With CytroBox, machine and plant manufacturers can achieve must greater efficiency. (Image source: Bosch Rexroth AG)

Connecting machines and facilities with IT systems opens up enormous potential for making forming technology more economical, quicker and more intuitive. This is exactly where the new CytroBox hydraulic power unit from Bosch Rexroth comes in. With its intelligent, energy-efficient modular design, it provides a new solution approach for the medium performance range from 7.5 to 30 kW. By integrating IoT technologies, it also paves the way for consistently implementing Industry 4.0 concepts.

The CytroBox is a hydraulic power unit for the medium performance range from 7.5 to 30 kW. Preset controllers in variable-speed pump drives adjust energy requirements on an individual basis. Consequently, the speed is reduced under partial or no load to save energy, and conversely increased...
under full load with a highly dynamic response. This saves up to 80 percent of energy compared to constantly driven power units. The high degree of efficiency of the manifold block, manufactured using the 3D sand core printing method, also contributes to efficient operation. With this additive manufacturing method, the manifold block is up to 40 percent more compact and has improved flow channels. This improves the oil flow, reduces pressure losses and minimizes the areas where leaks could occur as fewer plug screws are required.

**Cleverly connected to condition monitoring**

Equipped with a sensor package and open interfaces, the CytroBox is predestined for use in connected environments. Integrated and wired sensors provide information regarding the current filter, oil or drive condition. The collected data are then processed by the drive controller. With the help of Open Core Interface, they can then be conveniently further processed and integrated into modern machine concepts.

The CytroBox also offers a connectivity option for operators. This makes it easy to realize the potential of IoT technologies as a pay-per-use service easily and without risk. All information regarding the CytroBox – from the component and operating status or forthcoming maintenance work to predictive maintenance analyses is available via Rexroth’s Online Diagnostics Network (ODiN). As a result, the information is always close to hand.

**Full performance with the smallest of footprints**

Flexibility and a space-saving design are important criteria when selecting components. The CytroBox combines a small footprint with a compact design. This also includes a tank with optimized degassing and flow. Thanks to a CFD simulation, the oil volume is reduced by 75 percent – from 600 to a mere 150 liters. The use of synchronous technology also saves space. The high-performance water-cooled synchronous motors are up to 80 percent smaller than comparable asynchronous ones. All functions are brought together in a compact control cabinet. As a result, the CytroBox can be integrated into existing production lines in a flexible, space-saving manner.
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Lower noise emissions for greater comfort when working

The airborne sound is absorbed completely by the compact arrangement of all the components in one unitary housing and the built-in sound insulating mats. This way, no sound leaks out. In order to reduce noise emissions stemming from structure-borne noise, the motor pump group is rigidly affixed to a polymer-concrete foundation. The damping bearings which typically transmit the noise to the tank are completely eliminated. Consequently, the noise emission of the CytroBox is less than 75 dB (A) – even at full load. Comparable power units have an average noise level of 85 dB (A). This reduces the need for measures and costs for noise reduction, and also makes working very pleasant, even in direct proximity to the hydraulic power unit.

As one of the world’s leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 30,500 associates generated sales revenue of 5.5 billion euros in 2017.
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