PRESS INFORMATION

Modular and scalable drive concepts: New servohydraulic pump unit reduces energy consumption and engineering work

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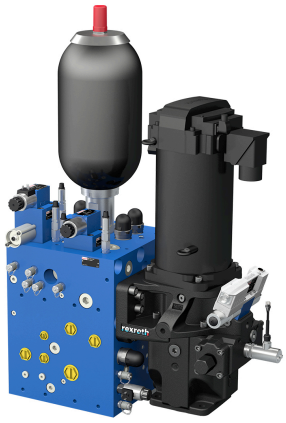
The primary-regulated drive from Bosch Rexroth makes it easier to engineer and commission plastics processing machines with high performance requirements



The new servohydraulic pump unit (SHP) from Rexroth has a compact design and reduces the engineering work required by being mounted directly on manifolds. (Image source: Bosch Rexroth AG)

The new servohydraulic pump unit SHP from Bosch Rexroth makes construction work much easier and fits seamlessly into modular plastics processing machines with various drive concepts. It combines the power density of hydraulics with the flexibility of electric drive concepts. The servo-hydraulic pump units which can be mounted on the manifold significantly improve energy efficiency, speed up the construction and commissioning process and reduce noise emissions.

The sharp rise in energy prices and the desire to help protect the climate are reinforcing end customer demand for greater energy efficiency in plastics processing machines in all performance classes. The new SHP4V servohydraulic pump unit from Bosch Rexroth reduces energy consumption in combination with the energy-efficient displacement control system. This significantly reduces the volume of oil required. To make this possible, Bosch Rexroth combines MS2N synchronous servo motors with A4 axial piston pumps. The actuator movement can be controlled by adjusting the speed or the pump itself. When used in plastics processing machines, the primary-regulated drive normally uses the speed to position the actuator and pump adjustment to limit the power.

The standardized, compact drive unit in various sizes makes hydraulic construction work easier in centralized and decentralized concepts. In addition, the SHP4V can be mounted on the manifold itself. This reduces not only the amount of materials required but also the assembly and commissioning work. It also increases the freedom available to engineers when putting in place modular concepts. As a result, a broad range of performance requirements is easily covered. Depending on the application, direct mounting also reduces air, structure and liquid-borne noise by approx. 5 dB(A) compared to concepts where the pump drive and manifold are connected by pipes. In terms of sound power, this means that emissions are more than halved.

The servohydraulic pump unit is particularly suitable for four quadrant operation. When the pressure is reduced, the motor switches to generator mode and recovers braking energy. The primary-regulated drive works at a lower speed in partial load mode and ensures that full use is made of the electric drive systems. The result: Less powerful motors and power electronics reduce the system and energy costs.

As a fully connective module, the drive unit supports futuristic condition monitoring and predictive analytics concepts designed to ensure maximum availability. The synchronous servo motor functions as a sensor, recording operating data and allowing conclusions to be drawn regarding possible wear. Additional sensors collect other operating data. As a result, the necessary maintenance work can be planned in advance and carried out during production breaks.

Basic Information Bosch Rexroth

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 31,000 associates generated sales revenue of around 6.2 billion euros in 2021.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

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