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# Plastics sector pioneers sustainable drive concepts

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Guido Hettwer, Head of the Business Unit Industrial Hydraulics, Bosch Rexroth AG (Image source: Bosch Rexroth AG)

Manufacturers of plastics machines are traditionally pioneers for new drive concepts which improve performance and energy efficiency. Variable-speed pump drives for example were first installed on a large scale in injection molding machines. The first electrohydraulic drive systems for controlled gap adjustment and closing movements were used in extrusion and blow molding machines.

Nowadays, modularly interchangeable hydraulic, hybrid and electric drive concepts are used in plastics machines to cater for different requirements in a flexible manner. At the same time, hydraulic systems offer clear advantages when it comes to power density and robustness, especially in higher performance classes. Modern hydraulics is also increasingly connected and flexible and works with great energy efficiency.

As a result, variable-speed pump drives in hydraulic power units and self-contained actuators reduce energy consumption by up to 80 percent. Optimized components reduce the amount of materials used, while hydraulic manifolds produced using 3D sand core printing allow a free choice of shapes and a reduction in pressure losses.

Flexible drive solutions with a short time to market are required if machine manufacturers are to produce smaller batches economically. During the design phase, online selection and configuration tools as well as preconfigured mechatronic modules significantly reduce engineering times. Simulations improve design quality as regards movement times and accuracy, control and aperture design. Software wizards guide users quickly through the commissioning process. Machine development and commissioning times are reduced as a result.

## 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,

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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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