

PRESS RELEASE

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Linear power made easy

**Exemplary efficiency and striking simplicity:
Bosch Rexroth completely redesigns hydraulic linear drives.**

- ▶ Revolutionary design: compact, effective and quiet
- ▶ Minimized overall costs: from engineering through to maintenance
- ▶ Plug and produce: fast and easy commissioning
- ▶ Usability: no hydraulics expertise required



Compact powerhouse: Bosch Rexroth's CytroForce combines optimized standard components to form an out-of-the-box solution that is easy to install. (Image source: Bosch Rexroth AG)

Bosch Rexroth's development work has taken the hydraulic linear drive to a whole new level. The evolutionary CytroForce concept manages to squeeze previously bulky structures into a smart compact axis for power, movement and positioning tasks. The out-of-the-box solution consisting of flow-optimized standard modules sets new benchmarks in terms of power density, energy efficiency and quiet operations. It is supplied as a plug-and-produce system, meaning that even machine manufacturers who do not possess expertise in hydraulics can benefit from the optimized overall costs involved.

On account of their enhanced performance credentials, CytroForce axes, which are robustly designed to meet IP65 protection class criteria, are

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redefining potential fields of application. Depending on the configuration in question, the CytroForce-M, which was the first to be launched, covers forces of up to 1,200 kN, distances of up to 1.0 m and speeds of up to 0.8 m/s. The positioning accuracy is 10 µm and the repetition accuracy is 5 µm.

In order to enable highly productive and economic presses, machine tools and industry-specific applications to be achieved, the CytroForce has been designed to ensure efficiency, availability and usability at every junction of its life cycle: suitable product documentation is available up to the 2D or 3D CAD model. The axes are already pre-configured in the factory and - after mechanical installation - only need to be electrically connected.

The maintenance concept is also incredibly simple: with the help of a service kit, even non-specialist service technicians can take fluid samples for laboratory analyses. Even the refilling process, which needs to be carried out from time to time, does not require any specific expertise. The service kits are available for all Bosch Rexroth servo-hydraulic axes (SHAs), including CytroForce.

Condition monitoring and/or predictive analytics can also be conducted by combining the system with Rexroth's ODiN service, helping to further increase the machine's availability.

The modular CytroForce is based on the tried-and-tested variable-speed energy-on-demand drive Sytronix. In the case of CytroForce, a manifold and a differential or tandem cylinder are connected to this energy-efficient unit, consisting of servodrive and hydraulic fixed or variable displacement pump. All hydraulic components and interfaces have been flow-optimized with the latest cutting-edge processes. This reduces noise emissions and increases performance whilst minimizing dimensions.

Together with the tank, safety valves and sensors, the CytroForce modules form a highly compact and efficient servo-hydraulic axis with a closed fluid circuit and an energy-on-demand and standardized drive and control concept.

“Our evolutionary solution, available from a single source, is pushing the boundaries in terms of potential applications for hydraulic linear axes“, says

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Stefan Thienen, Product Manager CytroForce at Bosch Rexroth. “The cross-industry advantages provide machine and system manufacturers from practically all sectors with new and exciting prospects and the potential to implement improvements with regard to presses, machine tools and many other applications.”

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, roughly 31,000 associates generated sales revenue of roughly 6.2 billion euros in 2019.

To learn more, please visit www.boschrexroth.com

The Bosch Group is a leading global supplier of technology and services. It employs roughly 400,000 associates worldwide (as of December 31, 2019). The company generated sales of 77.7 billion euros in 2019. 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 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 60 countries. Including sales and service partners, Bosch’s global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company’s future growth is its innovative strength. Bosch employs some 72,600 associates in research and development at 126 locations across the globe, as well as roughly 30,000 software engineers.

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