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German Innovation Award 2023: A double win for sustainable hydraulics from Bosch Rexroth

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The CytroForce and CytroMotion self-contained actuators reduce CO2 emissions, the use of materials and the overall cost of linear movements



Bosch Rexroth achieved a double win at the German Innovation Award 2023, with the self-contained actuators CytroForce and CytroMotion: (left to right) Stefan Thienen, CytroForce Product Manager and Heiko Oehm, Marketing Manager Industrial Hydraulics, Bosch Rexroth AG. (Image source: Martin Diepold).

Berlin – Bosch Rexroth won twice at the German Innovation Award 2023 in the “Excellence in Business to Business – Machines and Engineering” category. An independent, interdisciplinary jury awarded the CytroForce and CytroMotion self-contained actuators the "Winner" and "Special Mention" distinctions, thus recognizing Bosch Rexroth’s work to make industrial hydraulics more sustainable. The innovative combination of an electric drive and encapsulated hydraulics to form a compact, energy-efficient and low-maintenance complete solution for linear movements involving large forces reduces CO2 emissions by up to 80 percent.

Established by the German Bundestag and financed by German industry, the annual German Innovation Award honors products, technologies and services that offer added value for users and the environment. The prize, which has been awarded for design, brand and innovation achievements since 1953, is sponsored by the German Design Council. An independent jury assesses the projects submitted. This year, the experts from a range of areas including technology, digitalization, science and institutions honored two products from Bosch Rexroth.

The CytroForce self-contained actuator was the “Winner” in the “Excellence in Business to Business” category, while the CytroMotion compact axis was awarded the “Special Mention” distinction. Both products help to make power-intensive linear movements in machines and systems much more compact, but also more easily and cost-effective.

The two award-winning solutions are designed to offer maximum added value over the entire life cycle – with their compact design with fully electric control and open interfaces, energy-efficient, quiet operation and long, low-maintenance operating life. Bosch Rexroth thus meets key assessment criteria including social, ecological and economic aspects.

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The electric motor in the variable-speed drive uses only as much energy as the particular process step actually needs. Presses or joining machines thus save up to 80 percent in electricity and corresponding CO₂ emissions compared with conventional hydraulic systems. The integrated, flow-optimized design of the encapsulated hydraulics reduces the amount of materials and fluids required by up to 95 percent.

In addition, Bosch Rexroth's self-contained actuators help to deal with the shortage of skilled personnel. Engineering and commissioning are carried out within the familiar control architecture and thus don't require any specific hydraulics know-how. Installation requires up to 50 percent less space and can be carried out much more quickly as there is no need for piping, hoses or filters. Bosch Rexroth also reduces the total costs thanks to digital engineering and commissioning tools as well as straightforward maintenance with very long service intervals. The digital CytroConnect Solutions from Bosch Rexroth can further increase the availability of both actuators via condition monitoring or predictive analytics.

"We are delighted to have received this award – an important symbol of greater sustainability," said Guido Hettwer, head of the Industrial Hydraulics Business Unit at Bosch Rexroth. "The two award-winning self-contained actuators clearly show how previously energy-intensive applications can be made more sustainable, simple and future-proof through innovation and digitalization. Users in numerous industries – from individual machine tools to large-scale systems with multiple loads – can utilize our self-contained actuators and realize the associated potential."

Further information about self-contained actuators: www.Boschrexroth.com/SHA



The CytroForce and CytroMotion self-contained actuators combine the best features of an electric drive and hydraulics in a compact, energy-efficient and low-maintenance complete solution which is supplied ready for installation and can be put into operation quickly. (Image source: Bosch Rexroth AG)

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 and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and

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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 32,000 associates generated sales revenue of around 7.0 billion euros in 2022.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 421,000 associates worldwide (as of December 31, 2022). The company generated sales of 88.2 billion euros in 2022. Its operations are divided into four business sectors: Mobility, 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 470 subsidiary and regional companies in over 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. At 136 locations across the globe, Bosch employs some 85,500 associates in research and development, of which nearly 44,000 are software engineers.

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