Press release
Bosch Compact

Hannover Messe: seven Bosch highlights for manufacturers
Combining economy and ecology with Bosch industrial technology

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Hannover, Germany – Resource scarcity, an aging society, and labor shortages, coupled with the political and social goal of ecologically transforming the economy, mean German industry is facing major challenges. At the Hannover Messe, ideas and solutions for successfully overcoming these challenges will be presented and discussed. Bosch firmly believes that industrial technology has a significant part to play in this. It sees industrial technology as a rich source of potential growth. This growth will be driven by an increasing need for automation and Industry 4.0 solutions, the "merging" of electrical and hydraulic systems, and growing demand for GreenTech for the ecological transformation. Bosch will be presenting a range of new products and solutions at the Hannover Messe (April 17–21) (hall 6, booth D26 and hall 13, booth C16). In addition, Bosch experts will be giving deep dives into core topics at panel discussions and in lectures.

Automated battery recycling: More and more electric cars are finding their way onto our roads. This is increasing demand for batteries and for the recycling of the raw materials they contain, such as lithium, cobalt, and nickel. Bosch has developed special machinery and software for this purpose. These include fully automated discharging and disassembly systems in which battery modules are chemically deactivated in just a few minutes in a reliable process, ensuring that further processing can take place without the risk of electric shocks. Battery Lifecycle Company is building Europe's first fully automated plant at its site in Magdeburg, Germany – using Bosch technology. At Hannover Messe, Bosch is presenting its patented discharging solution.

Electrification of mobile machinery: Bosch Rexroth is launching its eLION portfolio solutions for the electrification of mobile machinery such as excavators, wheel loaders, and tractors. With over 80 motor variants, graded according to power and size, the company offers the broadest range in the industry, helping

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to reduce carbon emissions on construction sites, in mining, and in ports. The motors cover a nominal power range from 20 to 200 kW (peak power up to 400 kW). International customers such as Sennebogen and Kalmar Cargotec are already using the new Bosch drives in their products, and in this way driving forward the electrification of mobile machinery.

Stationary fuel cells: Bosch is the first company in Europe to work on the commercialization and mass production of solid-oxide fuel-cell systems. At Hannover Messe, Bosch is presenting stationary fuel cells with an overall efficiency of more than 85 percent. These fuel cells are suitable for distributed power generation on-site in buildings, urban neighborhoods, factories, trade and commerce, and data centers. The energy converters are currently being tested in some 60 pilot plants. Bosch plans to start volume production of stationary fuel cells in 2025.

Connected hydraulics: Until now, hydraulic control technology has been tied to hardware. With its H4U platform, Bosch Rexroth has now mapped hydraulic functions into software, making them hardware-agnostic. Mechanical engineers can integrate the functions into existing automation architectures and use an app for the hydraulic control of parameters such as pressure and volume flow. In this way, Bosch Rexroth increases productivity, boosts energy efficiency, and reduces carbon emissions from plants.

All-around tactile talent: Bosch Rexroth's Smart Flex Effector is a module that combines the precision of a robot with the sensitivity of a hand. The module's high-resolution position sensors detect positional deviations between the tool and the workpiece, so it can immediately initiates corrective movements. The Smart Flex Effector is suitable for handling or joining processes with narrow tolerances, for example when inserting glass plates into refrigerators or printed circuit boards into engine control units. At Hannover Messe, the Smart Flex Effector has been nominated for this year's Hermes Award, the world's most prestigious industry award.

Lightweight cobots: Bosch Rexroth is showcasing the powerful, reliable helpers from Kassow Robots at its booth. These lightweight robots can perform a variety of tasks in industrial manufacturing. The cobots have a high payload and large reach, and they can work in confined spaces: equipped with seven axes, the cobots can reach around corners like an arm and offer flexibility that is unparalleled on the market to date. In 2022, Bosch Rexroth acquired a majority stake in Kassow Robots ApS, based in Copenhagen, Denmark.

Automation toolkit: Consisting of hardware, software, and apps, Bosch Rexroth's ctrlX AUTOMATION is an open platform that provides all the building blocks for complete automation solutions. It reduces component and engineering costs by 30 to 50 percent, and comes with an affiliated partner network. This enables users to develop apps and services themselves and offer them to others in the ctrlX World ecosystem. Three years after its market launch, more than 600 customers already rely on ctrlX AUTOMATION.

Press photos are constantly updated and available at "Bosch at the Hannover Messe".

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The Bosch Group is a leading global supplier of technology and services. It employs roughly 420,000 associates worldwide (as of December 31, 2022). According to preliminary figures, the company generated sales of 88.4 billion euros in 2022. 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 85,000 associates in research and development, of which nearly 44,000 are software engineers.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by Robert Bosch GmbH and by a corporation owned by the Bosch family. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust.

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