

## PRESS INFORMATION

# Bosch Rexroth and Modine Partner on Thermal Management for Electrified Off-Highway Machinery

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Collaboration and innovation drive the transition to electric vehicles in industrial vehicles as two transportation industry leaders advance the state of the art together.

As part of its industry-leading efforts to electrify critical off-highway machinery, Bosch Rexroth today announced a partnership with leading thermal management manufacturer Modine (NYSE: MOD). The two organizations are collaborating to bring Modine EVantage™ thermal management systems to the Bosch Rexroth portfolio of eLION products for electrified off-highway machinery worldwide. Together, Rexroth eLION systems with Modine EVantage thermal management systems advance the electrification of customer platforms in the off-highway segment by delivering low emissions and high-performance EV technology.

“With the increased shift towards electrified mobile machines, there’s a parallel need to efficiently manage the thermal output of those crucial components,” said Zifan Liu, Bosch Rexroth Mobile Hydraulics System Engineer. “This partnership represents a collaborative effort to effectively address that issue and present end-users with the most productive machine possible.”

Bosch Rexroth worked with Modine because of its specialization in complete commercial EV thermal management systems. Modine designed a fully integrated, liquid-cooled thermal management solution for the eLION portfolio. The eLION portfolio includes a permanent magnet synchronous electric motor, electric inverter, onboard charger, DC-DC converter, power distribution unit, high voltage cables with plugs, and a controller. The thermal management system from Modine works seamlessly with the eLion portfolio to maintain optimal battery temperature, efficiently cool power electronics, and ensure passenger comfort.

"Over a century ago, Modine set out to transform thermal management for the transportation sector, and today, in partnership with Bosch Rexroth, we're tracing back our roots to meet the evolving needs of electrified mobile off-highway machinery," said Gina Maria Bonini, Vice President and General Manager of Advanced Thermal Systems at Modine. "This collaboration allows us to leverage our state-of-the-art heat exchanger technology and intelligent electronic products to deliver the optimal thermal conditions for the critical battery and electronic components on which Bosch Rexroth customers rely."

To keep up with future developments from this partnership and for more information on our products, please visit: [www.boschrexroth-us.com/elion](http://www.boschrexroth-us.com/elion), [www.modineev.com](http://www.modineev.com).

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The illustration of highlighted components represents Modine Evantage (green), which is a liquid-cooled thermal management system inside Bosch Rexroth's eLION portfolio (blue). Photo: 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 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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