News Release

Grip and Propulsion on Ice – BorgWarner Tests 48V Solutions in Arctic Conditions

- *Powerful solutions for HEVs and EVs provide enhanced vehicle dynamics and traction even under extreme Arctic conditions*
- *BorgWarner supports electrification trend and corresponding technologies*
- *Customers went test-driving innovations engineered to improve efficiency, reduce emissions and enhance driving characteristics*

Auburn Hills, Michigan, March 26, 2018 – BorgWarner presented its latest propulsion solutions optimized for vehicles using a 48V power supply at the annual Arctic Drive Winter Test in Arjeplog, Sweden. Supporting the transition to cleaner and more efficient vehicles with different propulsion demands, the company offers a broad portfolio of modern solutions that provide increased efficiency, functionality and performance. For instance, BorgWarner's 48V propulsion technologies enhance vehicle traction and stability for improved safety and a fun-to-drive experience even under the toughest conditions. Among the innovations displayed in Arjeplog were the company's P2 hybrid modules, the electric Rear Drive Module (eRDM) for P3-type hybrids, the 48V electric All-Wheel Drive (eAWD) system for P4-type hybrids and the next-generation e-hydraulic AWD coupling.

"At BorgWarner, we constantly work on improving our technologies. We aim to anticipate our customers' demands for solutions that provide enhanced efficiency as well as first-rate vehicle stability and traction on almost any surface," said Dr. Stefan Demmerle, President and General Manager, BorgWarner PowerDrive Systems. "With our broad portfolio of propulsion solutions, we are well prepared to support global automakers with our technologies for P0-type hybrids to P4-type hybrids as well as fully electric vehicles."

Combining an electric motor – placed parallel to the main axis for optimal packaging – and a disconnect clutch, power electronics and a clutch control module as well as a dual mass flywheel, BorgWarner's 48V off-axis P2 module facilitates significant CO_2 emission reductions by allowing pure electric driving along with other hybrid functionalities. The system's compact design is compatible with a variety of transmission types and enables easy integration.

Providing all-wheel drive stability and traction without added weight, BorgWarner's advanced 48V solution, the electronically driven all-wheel drive (eAWD) for P4-type hybrids, combines hybridization and AWD. Using two electric motors, the system drives the rear axle and distributes torque between the rear wheels for enhanced vehicle dynamics. Compared with mechanical AWD systems, this efficient solution can reduce fuel consumption by up to 25 percent.

Torque vectoring goes electric with BorgWarner's 48V eRDM for P3-type hybrids, which combines it with full-function mechanical AWD for maximum vehicle stability. Enabling regenerative breaking, boosting and electrical sailing when integrated into a P3-type hybrid system, the eRDM also significantly reduces CO_2 emissions and contributes to fuel savings.

Featuring an integrated electronic control unit (ECU) and adaptable vehicle dynamics software, the company's latest AWD coupling provides the desired driving characteristics at any given time. Furthermore, the solution facilitates best-in-class response time and torque density while being capable of offering full locking torque at any given time and speed, depending on road conditions and vehicle load distribution.

About BorgWarner

BorgWarner Inc. (NYSE: BWA) is a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. With manufacturing and technical facilities in 66 locations in 17 countries, the company employs approximately 29,000 worldwide. For more information, please visit borgwarner.com.

During the annual Arctic Drive Winter Test, BorgWarner presented a variety of groundbreaking technologies, which improve fuel efficiency, stability and vehicle dynamics for combustion and hybrid vehicles on nearly every terrain.

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