



Dana Unveils Comprehensive Strategy for Electrification in Construction, Off-Highway Markets

April 23, 2018

Aerial Work Platform Showcases Market-Ready Spicer® Electrified™ Technologies, with Ongoing Support for Future Vehicle Architectures

PARIS, April 23, 2018 /PRNewswire/ -- Dana Incorporated (NYSE: DAN) today revealed new technologies in support of the rapidly evolving development of hybrid- and electric-powered construction and other off-highway vehicles at Intermat, the international exhibition for the civil engineering and structural building industries.



Consistent with its approach in other vehicle markets, Dana's strategy enables original-equipment manufacturers to accelerate their hybrid and electric vehicle development programs. It starts with a modular approach that combines Spicer® Electrified™ hybrid and electric drivetrain solutions into current vehicle architectures with internal-combustion engines.

From this foundation, Dana further supports the evolution of vehicle mobility through a continuum of innovations that provides a smooth transition to fully integrated electric-drive technologies optimized within a single package to maximize performance.

At Intermat, Dana will showcase its technological capabilities through a hybrid-electric telescopic boom lift equipped with more than 30 Spicer drivetrain and Brevini motion products. This mid-sized aerial work platform will perform a series of typical driving and working maneuvers to illustrate how Dana serves as a Tier One contributor to the performance, efficiency, safety, intelligence, and systems integration of hybrid and electric vehicles.

In addition to aerial work platforms, Dana is actively developing hybrid and electric drive solutions for numerous wheeled and tracked vehicles in the construction, mining, material-handling, and aircraft ground support industries.

"Tightening emissions requirements, increasingly strict local government regulations, and accelerating market demand for vehicles that promote sustainability are driving the development of hybrid and electrified technologies," said Aziz Aghili, president of Dana Off-Highway Drive and Motion Technologies. "We are demonstrating our unmatched commitment as a top-tier supplier to OEMs by delivering solutions today while also developing next-generation innovations for the vehicles of tomorrow."

Market-Ready Offerings for Hybrid, Electric Vehicles

Dana offers a series of modular hybrid- and electric-drive systems that can fit into existing vehicle design envelopes and provide OEMs with effective, low-risk, quick-to-market solutions. These products can be connected to traditional Spicer wheel drives, track drives, axles, and transmissions to deliver hybrid or electric functionality.

Dana has designed a wheel drive paired with a motor for electric-driven aerial work platforms (AWPs) ranging from 3 to 7 tonnes (3 to 8 tons). Additionally, engineers are adapting Dana technologies to deliver additional wheel-drive, track-drive, and axle-based solutions for electric-driven AWP applications up to 24 tonnes (26 tons).

Support for Future Hybrid and Electric Vehicles

As the development of hybrid- and electric-drive vehicles progresses, Dana is designing and testing compact, fully integrated drive systems consisting of motors, gearboxes, power electronics, and thermal-management products that deliver optimal performance while reducing manufacturing complexity and total cost of ownership.

For example, Dana is developing drive systems that integrate advanced electric motor and wheel-drive technologies in a single package for electric-powered AWPs with overall weights of 8 to 12 tonnes (9 to 13 tons).

Extensive Support for Electrification Across Vehicle Markets

For many years, Dana has been a pioneer in developing applications for electrified vehicles used in mining and aircraft ground support – industries that have been early adopters of battery-electric solutions. Recently, Dana further emphasized engineering and development for hybridization and electrification as part of the company's enterprise strategy, "Shifting into Overdrive," which focuses on leveraging the company's decades of electric engineering expertise and product knowledge to offer an extensive portfolio of advanced hybrid and electric technologies that have been engineered

for multiple vehicle markets.

For example, Dana has developed electric drive units for electric vans and integrated e-axes for electric transit buses and city delivery vehicles under the Spicer Electrified brand, as well as a broad range of advanced Long[®] brand thermal-management solutions for battery systems and power electronics associated with electric-powered vehicles.

Furthermore, Dana now has access to a full array of advanced technologies that support hybrid and electric vehicle architectures following the acquisition of the power-transmission and fluid power businesses of the former Brevini Group, S.p.A. in February 2017.

Dana currently offers a wide selection of Brevini[®] motion products to support the unique power distribution requirements of hybrid and electric off-highway vehicles. These products include gear pumps, hydraulic power units, valves and controls, hydraulic axial piston motors and pumps, orbital motors, control hardware and software, advanced sensor technologies, and operator-information displays.

Additionally, Dana is leveraging a wide portfolio of technologies for off-highway customers to offer dozens of successful electrified driveline applications in production and pre-production testing.

Dana at Intermat

Dana will showcase a full breadth of drive and motion products for the construction industry at Intermat, April 23-28, 2018, in stand 5A C 031, while Dana's hybrid-electric telescopic boom lift will offer live demonstrations at outdoor stand 5B Ext 023 at the Paris Nord Villepinte exhibition center. To learn more, visit www.dana.com/offhighway.

About Dana Incorporated

Dana is a world leader in highly engineered solutions for improving the efficiency, performance, and sustainability of powered vehicles and machinery. Dana supports the passenger vehicle, commercial truck, and off-highway markets, as well as industrial and stationary equipment applications. Founded in 1904, Dana employs more than 30,000 people in 33 countries on six continents who are committed to delivering long-term value to customers. Based in Maumee, Ohio, USA, the company reported sales of \$7.2 billion in 2017. Dana is ranked among the Drucker Institute's listing of the 250 most effectively managed companies. For more information, please visit dana.com.

 View original content with multimedia: <http://www.prnewswire.com/news-releases/dana-unveils-comprehensive-strategy-for-electrification-in-construction-off-highway-markets-300634120.html>

SOURCE Dana Incorporated

Jeff Cole, +1-419-887-3535, jeff.cole@dana.com