

NEWS RELEASE

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Inmotive Addresses EV “Torque Hole” Issues with Unique Transmission Geometry

- *Ingear two-speed electric vehicle transmission achieves imperceptible shifts at 100 Nm*
- *Passenger experience is as smooth as a single-speed gearbox under normal driving, unlike other multi-speed transmissions that could be applied to EVs*

TORONTO, Ontario - October 14, 2021 – Inmotive, the makers of the Ingear two-speed transmission for electric vehicles (EVs), today announced that its latest vehicle prototype has achieved imperceptible shifts at 100 Nm, making great strides in eliminating “torque hole” issues that can be found in traditional transmissions.

“This is a significant milestone and has been a major priority for Inmotive, to ensure that there is no loss of torque during shifting,” said Paul Bottero, CEO of Inmotive. “Our intent from the beginning was to create a multi-speed EV transmission that shifts so smoothly, it compares to a single-speed transmission and gives drivers the torque feel they’ve come to expect from EVs.”

Inmotive is currently working to bring the Ingear to market. Invented and designed for the next generation of electric vehicles, the Ingear features a simple and durable design that enables a more efficient powertrain, with extended range, at lower cost.

The company has worked to solve the “torque hole” problem through a combination of improved geometry, better tensioner control and careful motor commands. Currently, the Ingear’s geometry can handle full load throughout the shift, with the system transmitting 130 Nm of peak torque throughout the shift dynamically.

“This is something that has plagued the transportation industry for a long time,” Bottero said. “With our immense improvements, EVs can now have the benefits of a multi-speed transmission without losing efficiency while driving, spending energy to shift, or abrupt disconnects or disruptions to the smooth acceleration.”

Traditionally, the “torque hole” issues have been alleviated with expensive, complicated clutch systems that consume a lot of energy during a shift and are not efficient even when not shifting.

With the Ingear, EV drivers and passengers may not notice that a transmission is in their vehicle, so they get all the benefits and no discomfort during normal driving.

Currently, Inmotive has confirmed the results with independent test drivers and OEM development partners.



About Inmotive Inc.

Inmotive is the Canadian based inventor of the Ingear, an ultra-efficient multi-speed powertrain technology for a wide range of applications. The Ingear extends electric vehicle range at very low additional cost and weight, while providing continuous torque during smooth shifts. Its highly reliable design also increases torque, acceleration, gradeability and top speed and is protected with 16 patents issued and 17 patents pending. Inmotive is headquartered in Toronto, Canada, with offices in India and China. More information is available at www.inmotive.com.

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