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Geely's New EV Adopts Nidec's E-Axle Traction Motor System

Geely's new electric SUV *Geometry C* and Nidec's Fully Integrated 150 kW E-Axle *Ni150Ex*

Geometry C*, the new electric vehicle recently unveiled by Geely Automobile, will be driven by Nidec's 150 kW E-Axle model *Ni150Ex

The new all-electric SUV *Geometry C* was announced in May this year by Geely Automobile, a subsidiary of the China-based global automobile manufacturer Zhejiang Geely Holding Group that also owns Volvo Car Corporation. The fast-growing company had a production output of over 1.3 million vehicles in 2019. Geely Automobile, which established an EV-development joint venture with Daimler AG—known for brands like Mercedes-Benz and Smart—in 2019, is pursuing a strategy of actively contributing to the development of the electric vehicle market.

The *Geometry C* is the second model from the company's high-end EV brand *Geometry* and features an in-house developed proprietary battery cooling system, a heat pump air conditioning system and lightweight vehicle body technology among other things. It has a range of over 500 km and is outfitted with an automated parking system and intelligent network technology with 5G capabilities.

Nidec's E-Axle *Ni150Ex* that drives the *Geometry C* is based on the company's first mass-produced E-Axle traction motor system that entered production in April, 2019. By leveraging know-how, built up by the small precision motors in the IT field, related to magnetic circuit design and by using permanent magnets and a proprietary oil-cooling-based design, Nidec has developed a compact motor that,

combined with the next generation of our inverter, contributes significantly to the excellent vehicle performance, low power-consumption and low noise and vibration of the car. By achieving a maximum power output of 150 kW and a maximum system torque output of 3,100 Nm while only weighing 91 kg Nidec's Ni150Ex E-Axle also contributes to reducing the weight of the *Geometry C*. Development and optimization of the model started in May, 2019 and wrapped up in only a year.

Nidec's E-Axles are characterized by being compact and light-weight as a result of their fully integrated designs that combine motors, inverters and gears. In addition to the *Ni150Ex* that is the latest version of the 150 kW model that became the first fully integrated traction motor system of its kind in the world designed by a supplier to enter mass-production in April 2019, Nidec has also developed four other models: *Ni200Ex* (200 kW), *Ni100Ex* (100 kW), *Ni70Ex* (70 kW) and *Ni50Ex* (50 kW). Furthermore, cars that use a front + rear dual motor configuration can be supplied with up to 400 kW by combining two Nidec E-Axles. Armed with this world-class comprehensive lineup, Nidec is capable of supplying traction motor systems that can power an estimated 98% of all electric passenger vehicles. Nidec has set a target of achieving 35% global market share in the EV traction motor market by 2030.

Ni200Ex	Ni150Ex	Ni100Ex	Ni70Ex	Ni50Ex
(200kW/4200Nm)	(150kW/ 3100 or 3900Nm)	(100kW/2400Nm)	(70kW/1600Nm)	(50kW/1600Nm)
Mass-production planned for 2023	**In mass-production since April, 2019**	Mass-production planned for second half of 2020	Mass-production planned for 2021	Mass-production planned for 2022
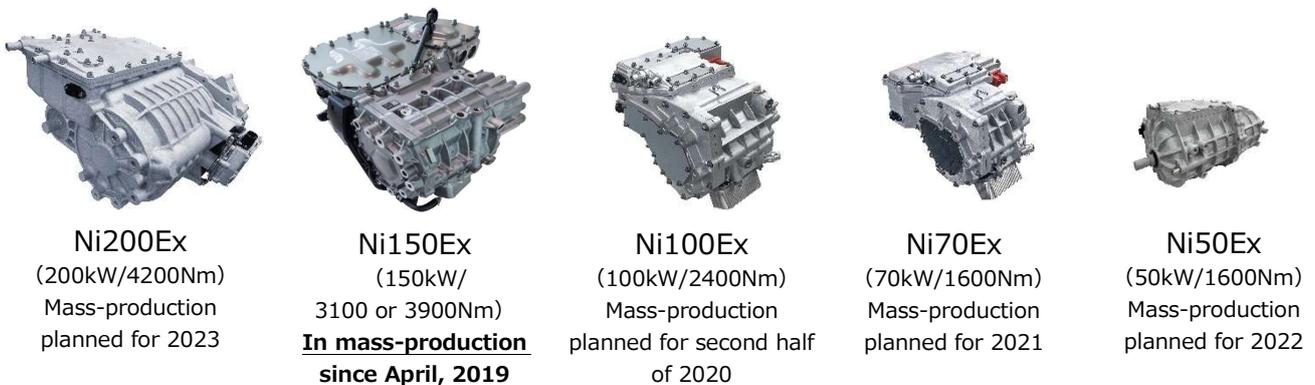
*Specifications may vary as Nidec's E-Axles are customized and optimized for each car model.

Nidec was founded in Kyoto, Japan in 1973 by four engineers and has since grown into a world-leading comprehensive motor manufacturer encompassing more than 300 subsidiaries employing over 120 thousand people throughout the world.

After becoming the first company in the world to successfully commercialize a direct drive spindle motor for HDDs using brushless DC motor technology, the company branched off into the automotive motor market which now constitutes its fastest growing business segment.

Nidec's electric power steering motors, in particular, have captured the largest global market share and helped cement the company's position in the industry.