



COMAU HAS DELIVERED A HIGH-VOLUME ELECTRIC DRIVE ASSEMBLY LINE TO GEELY VEREMT TO DOUBLE ITS AUTOMATION RATE

Grugliasco (Turin), January 25, 2022 - Comau has developed and deployed an automated e-drive assembly line for Geely Automobile Holdings at its Geely Veremt plant in Ningbo (China), for the end-to-end assembly of the electric motor, gearbox and inverter. Designed in close collaboration with the Geely team, the complete line uses a flexible automatic production system to assemble the permanent magnet motor rotors, gearboxes and electronics drives, in addition to automated quality control and testing. The innovative solution increases the plant's automation rate from 40% to 80% while delivering a full-scale production capacity of 120,000 jobs per year.

Due to the complexity of the project, the joint technical team worked in close synergy during the entire process. Comau also leveraged its 45+ years of experience in powertrain assembly when combining best-practice technology and process innovations to achieve Geely's high-volume production targets. Using multiple robots to install the motor rotors, the automated line also features 3D vision positioning and guidance, automatic high-speed magnet installation, automatic injection of rotor cores and the automatic dual-position dynamic balance correction, magnetization and more. The electric drive line, on the other hand, includes advanced three-in-one assembly such as motor stator casing, thermal sleeve, motor static testing, motor dynamic testing, automatic bearing feeding and pressing, automatic bolt feeding and tightening, and the automatic measurement and selection of gaskets.

Since its initiation, Comau has dedicated significant design resources to the project, including 20 engineers who completed the design phase in just 4 months. The project execution team also overcame additional challenges due to the impact of the COVID-19 pandemic and product optimization changes, delivering the line in just over 12 months. Thanks to the quick and targeted response to post-delivery modification requests, mass production was officially launched in late 2021.

"We have developed solutions that make our manufacturing process more agile and efficient as a concrete result of our collaboration with Comau," said Geely Veremt Vice President, Mr. Sun Yongjing. *"Furthermore, the automated lines help ensure that our new products will continue to have the same high level of quality and excellence that make the Zeekr - Holding of Geely Group, editor's note – successful brand around the world."*





According to IHS Markit, electric vehicles are expected to comprise 60-80% of all new car sales in 2050¹. The prediction has prompted automakers to look for ways to automate the assembly of e-axle drives, which combine electric motors, transmissions and power electronics in a single unit. This has created opportunities for industrial automation companies such as Comau, which is at the forefront of this trend.

“We are pleased to expand our long-term relationship with Geely and support them on their way to e-mobility through our technical know-how and methodology in e-motor systems,” added Wang Junwu, Comau China Head of Technology. *“Delivering this innovative assembly line is a direct result of Comau’s longstanding experience in automation, smart manufacturing and digitalization, in addition to our pioneering electrification expertise.”*

The successful delivery of this project has provided a strong production guarantee for the manufacturing of Geely’s pure-electric vehicles. It has also enriched Comau’s design and manufacturing experience with electric drive automatic production lines, which will be leveraged in the implementation of subsequent projects.

Comau, a member of Stellantis, is a worldwide leader in delivering advanced industrial automation products and systems. Its portfolio includes technology and systems for electric, hybrid and traditional vehicle manufacturing, industrial robots, collaborative and wearable robotics,

¹ *The New Map: Energy, Climate and the Clash of Nations*, Daniel Yergin, IHS Markit Vice Chairman, published by Business Wire, <https://www.businesswire.com/news/home/20201020005948/en/>





autonomous logistics, dedicated machining centers and interconnected digital services and products able to transmit, elaborate and analyze machine and process data.

With over 45 years of experience and a strong presence within every major industrial country, Comau is helping manufacturers of all sizes in almost any industry experience higher quality, increased productivity, faster time-to-market and lower overall costs. The company's offering also extends to project management and consultancy, as well as maintenance and training for a wide range of industrial segments. Headquartered in Turin, Italy, Comau has an international network of 6 innovation centers, 5 digital hubs, 9 manufacturing plants that span 13 countries and employ 4,000 people. A global network of distributors and partners allows the company to respond quickly to the needs of customers, no matter where they are located throughout the world. Through the training activities organized by its Academy, Comau is also committed to developing the technical and managerial knowledge necessary for companies to face the challenges and opportunities of Industry 4.0.

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