Automated assembling of electric motors WITH HAIRPIN TECHNOLOGY

The flexibility of the machines designed and manufactured by Atop allows implementing stators with variable shapes and sizes. This means the production, with the same plant, of motors with different technical specifications.

In 2016, around 800,000 electric cars were sold in the world, with the 40% rise compared to the previous year. As many as 63% of them are BEV (Battery Electric Vehicle), i.e. cars whose propulsion is directly supplied by an electric motor powered by batteries. A more and more significant prevalence that is constantly growing; within 2020, the offer of this vehicle typology on the European market is expected almost to triple, rising from the 20 currently available models to the foreseen 54. According to the data provided by the E-Mobility Report study carried out by Energy & Strategy Group of Milan Polytechnics in 2016, it is also evident that the world market of the electric mobility is scoring impressive growth rates. To be competitive in this market it is important to bet on the technological innovation of electric-traction motors, which must be increasingly compact, lighter, with higher performances and low consumptions. Atop is specialized in supporting customers in each project phase, backing them in the achievement of this important target. First, the company executes an analysis of the customer’s product, which needs an engineering assessment aimed at the motor industrialization. Afterwards, it implements the prototypes that allow testing the manufacturing feasibility. Once approved the project and tested its efficiency, Atop produces the machines for the automated assembling of electric motors with hairpin technology, offering the suitable automation level for the demanded productivity.

Flexibility and performances for prototypes and small batches

The special winding hairpin technology, already integrated by Atop in fully automated lines for the production of electric motors for starter and electric- and hybrid-traction motor applications, has been further developed. The result of the technological progress achieved allows the implementation of very flexible machines, suitable for both the development of prototypes and the mass-production with low production volumes. The flexibility of Atop machines allows customers to produce hairpin stators with variable shapes and sizes, manufacturing with the same plant motors with different technical specifications. The machines perform the processes of slot insulation, hairpin forming and insertion, enlargement and twisting, cutting, repositioning and laser welding of terminal wires. Each operation is carried out with utmost precision and speed, granting an optimal control of every phase of the manufacturing process. The machines implemented by Atop grant the highest flexibility, reliability and user friendliness, exploiting as strong point the capability of offering customized solutions, aimed at satisfying customers’ specific demands, even the most complex, worldwide.
Machines and automatic lines using tailored technology for the production of conventional and special electric motors. ATOP faces new challenges constantly to assist producers in their manufacture of electric traction motors with hairpin technology for the automotive industry.