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Gnat Shalev¹, Yuliya Sobol²

¹student of group E-410a, National University «Zaporizhzhia Polytechnic»

²PhD (Philology), assistant prof. National University «Zaporizhzhia Polytechnic»

DESIGN AND OPERATION CHARACTERISTICS OF ELECTRICAL VEHICLES ENGINES

The electric vehicle engine consists of a stator, rotor, cooling air duct, heat exchanger and axial fan. Under the influence of the magnetic field that occurs in the stator, the rotor is set in motion, where the induction current passes. After that, electrical energy, falling on the winding of the motor itself, is modified into rotation energy.

There is a significant difference between electric motors used in production and those that are installed directly in electric cars. In the latter case, they are much more powerful. For new developments, scientists are sharing the concept of electric cars and other electrical devices more and more.

The differences between a car with an internal combustion engine and an electric car are quite significant: the scheme of electric car is much simpler, the number of moving parts is reduced. For this reason, electric vehicles are often referred to as safe vehicles.

The engine of an electric vehicle is fundamentally different from an internal combustion engine (Fig.1). There are no combustion chambers, no crankshaft and no pistons. The electric motor consists of a stationary stator, through which current is passed, and a rotor. The rotor is a set of electrically conductive rods.

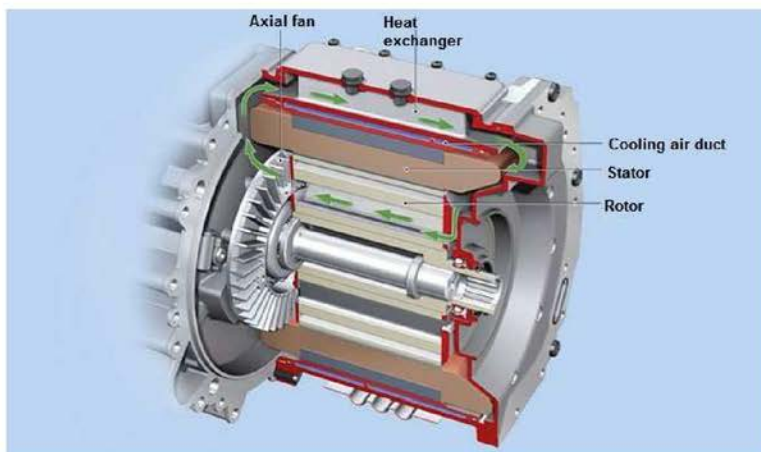


Figure 1. The electric motor

Any electric car consists of the following components:

1. engine (electric);
2. power battery (its capacity can vary significantly, it directly depends on the engine power);
3. inverter;
4. electronics system for car control;
5. transmission of a simplified form;
6. converter.