



## Title

# VARIABLE RELUCTANCE MOTOR WITH OUTER ROTOR AND MODULAR CONSTRUCTION FOR E-BIKE



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## Short presentation

The patent refers to a variable reluctance synchronous motor with outer rotor and modular construction. The rotor is made up of six modules, between modules is an element of non-magnetic separation. Each module is made up of three separate magnetic elements fixed to each other by a dovetail joint. The connecting elements are made of non-magnetic material. Each pole rotor is provided with holes that allow attachment of 3 different lengths of spokes on the same module. Each spoke is fixed by means of safety spring pin. Using this motor with outer rotor and modular construction, facilities maintenance operations for a such systems making them more reliable and simple. Depending on the type of defect can be removed the entire motor or only components (rotor poles, spokes).



## Applicability

This type of machine is designed to propel small electric vehicle as an electric bike. The electric machine will be mounting in the wheel to obtain a high efficiency of the mechanical transmission. The advantage of the machine is the simple maintenance which can be achieved by anyone thus is perfect suitable for an electric bike.



## Images

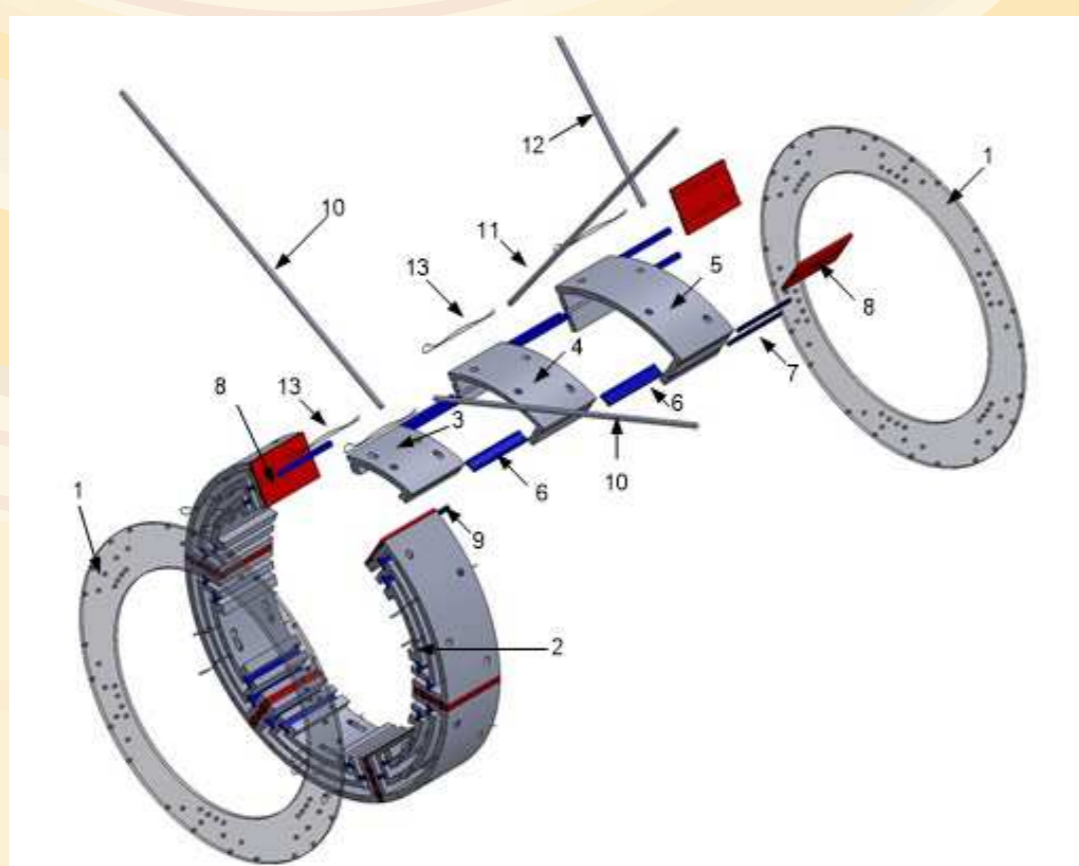


Figure 1. Spatial view of the motor with all the elements in details.

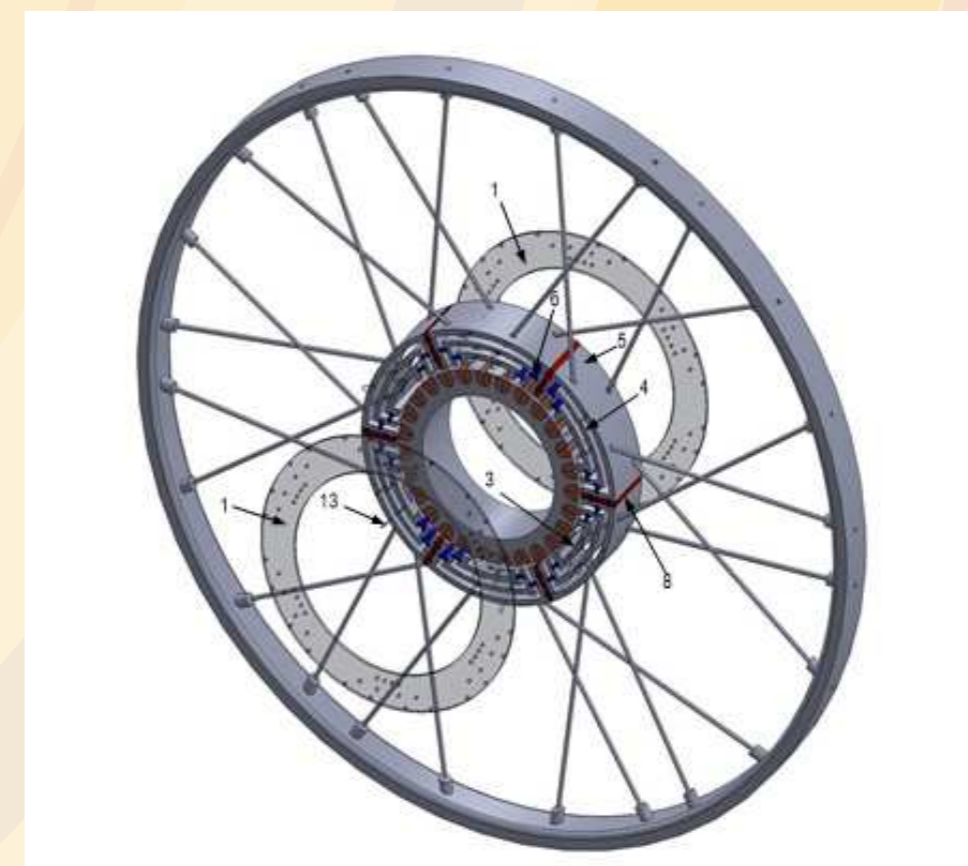


Figure 2. Spatial view of a bike wheel with the electric machine incorporated



Figure 3. Prototype machine