

Electric Motor

More Details

An electric motor has several components. The fixed magnetic outer part, also called stator, often consists of a permanent magnet. The rotating inner part, also known as the rotor, in turn consists of several components and, like the outer part, is also magnetic.

The armature of the rotor consists of an iron core around which a coil is wound. If current flows through the coil, a magnetic field is created. The direction of the current determines the orientation of the magnetic field.

The rotor and the permanent magnet in the outer part of the electric motor repel or attract each other through their magnetic fields. This causes the rotor to move. By constantly reversing the polarity of the coil, a continuous rotation of the rotor is created. For this purpose, the coil is connected to the commutator - a disc that rotates with the rotor. This disc is connected to a voltage source via sliding contacts and supplies the coil with power. The rotation of the rotor and thus also of the commutator constantly reverses the direction of the current and the alignment of the magnetic field of the coil. Without the commutator, the rotor would only rotate until its magnetic field is aligned with the magnetic field of the stator and there would be no further movement.