

Electrical Machine

A generator is an electrical machine which converts mechanical form of energy into electrical form. Generator works on the principle that whenever a conductor moves in a magnetic field, an emf gets induced in the conductor. This principle is called as generator action.

Generators have generally two basic parts named "Stator" and "Rotor". Mechanical energy is provided to the rotor of a generator by means of a prime mover (i.e. a turbine). Turbines are of different types like steam turbine, water turbine, wind turbine etc. Mechanical energy can also be provided by IC engines or similar other sources. To learn more about how generators work, read the following articles.

- AC Generator (converts mechanical energy into Alternating Current (AC) electricity)
- DC Generator (converts mechanical energy into Direct Current (DC) electricity)

Motor:

A motor is an electrical machine which converts electrical energy into mechanical energy. When a current carrying conductor is placed in a magnetic field, the conductor experiences a mechanical force and this is the principle behind motoring action.

Just like generators, motors also consist of two basic parts, stator and rotor. In a motor, we give electric supply to both the stator and rotor windings which causes a mechanical force between the stator and rotor. This force causes the rotor to rotate. To learn more about electric motors, read the following articles.

- AC motors: (i) Induction motors and (ii) Synchronous motor
- DC motors: (i) Brushed DC motor and (ii) Brushless DC motor

Transformers:

Transformers do not actually make conversion between mechanical and electrical form, but they transfer electric power from one circuit to another circuit. They can decrease or increase the voltage while transferring the power without changing the frequency, but with the corresponding increase or decrease in the current. Transformers also belong to **electrical machines**.