

Forklift Alternators

Forklift Alternators - A machine used to transform mechanical energy into electric energy is referred to as an alternator. It can perform this function in the form of an electric current. An AC electric generator could in principal be termed an alternator. However, the word is usually utilized to refer to a rotating, small machine powered by internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are referred to as turbo-alternators. Most of these machines use a rotating magnetic field but occasionally linear alternators are utilized.

A current is generated within the conductor when the magnetic field surrounding the conductor changes. Usually the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field likewise called EMF is generated as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Usually, there are 3 sets of stator windings. These physically offset so that the rotating magnetic field generates 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field can be made by production of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally located in larger devices than those used in automotive applications. A rotor magnetic field can be induced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding that allows control of the voltage produced by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These machines are limited in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.