

Forklift Alternators

Forklift Alternators - An alternator is a machine which converts mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electric generator can also be referred to as an alternator. The word normally refers to a small, rotating device powered by automotive and various internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are referred to as turbo-alternators. Nearly all of these devices use a rotating magnetic field but occasionally linear alternators are also utilized.

If the magnetic field around a conductor changes, a current is generated in the conductor and this is actually how alternators produce their electrical energy. Often the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually known as the stator. If the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input makes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Normally, there are 3 sets of stator windings. These physically offset so that the rotating magnetic field produces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these make use of slip rings and brushes with a rotor winding or a permanent magnet to generate a magnetic field of current. Brushless AC generators are most often located in larger machines like for example industrial sized lifting equipment. A rotor magnetic field could be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding which allows control of the voltage generated by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current in the rotor. These devices are limited in size due to the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.