

Forklift Alternator

Forklift Alternators - An alternator is actually a machine that converts mechanical energy into electric energy. This is done in the form of an electrical current. In principal, an AC electrical generator could be referred to as an alternator. The word normally refers to a small, rotating device powered by automotive and different internal combustion engines. Alternators that are placed in power stations and are powered by steam turbines are known as turbo-alternators. Most of these devices use a rotating magnetic field but from time to time linear alternators are utilized.

A current is produced in the conductor if the magnetic field all-around the conductor changes. Normally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes the rotor to turn. This rotating magnetic field generates an AC voltage in the stator windings. Typically, 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 induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often located in bigger devices than those used in automotive applications. A rotor magnetic field can be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding that allows control of the voltage generated by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current in the rotor. These machines 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.