

Forklift Alternators

Forklift Alternators - An alternator is a machine which transforms mechanical energy into electric energy. It does this in the form of an electric current. In essence, an AC electric generator could likewise be called an alternator. The word normally refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are actually referred to as turbo-alternators. Most of these devices use a rotating magnetic field but sometimes linear alternators are utilized.

A current is generated in the conductor when the magnetic field surrounding 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 known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input causes the rotor to revolve. This rotating magnetic field produces 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 lasting 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 utilized in automotive applications. A rotor magnetic field could be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize a rotor winding that allows control of the voltage generated by the alternator. It does this 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 restricted 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.