

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine that converts mechanical energy into electric energy. It does this in the form of an electric current. In essence, an AC electric generator can likewise be called an alternator. The word usually refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators that are located in power stations and are powered by steam turbines are called turbo-alternators. Nearly all of these machines use a rotating magnetic field but occasionally linear alternators are likewise utilized.

A current is induced in the conductor whenever the magnetic field surrounding the conductor changes. Generally 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. When the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes 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 are physically offset so that the rotating magnetic field produces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field could be made by production of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are usually located in larger machines than those utilized in automotive applications. A rotor magnetic field could be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding that 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 inside the rotor. These devices are limited in size because of the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.