

Forklift Alternator

Forklift Alternators - An alternator is actually a device that changes mechanical energy into electric energy. It does this in the form of an electrical current. In principal, an AC electric generator can be called an alternator. The word typically refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators that are situated in power stations and are powered by steam turbines are referred to as turbo-alternators. The majority of these devices utilize a rotating magnetic field but occasionally linear alternators are likewise used.

A current is produced in the conductor when the magnetic field around 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 referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input causes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Normally, 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 may be made by induction of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally located in larger machines compared to those used in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of a rotor winding that allows control of the voltage induced by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet devices avoid the loss because of 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.