

Forklift Alternators

Forklift Alternator - An alternator is actually a device that transforms mechanical energy into electrical energy. This is done in the form of an electrical current. Basically, an AC electrical generator can be labeled an alternator. The word usually refers to a small, rotating machine driven by automotive and different internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are actually known as turbo-alternators. The majority of these devices make use of a rotating magnetic field but at times linear alternators are used.

A current is produced in the conductor if the magnetic field surrounding the conductor changes. Usually the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core called the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Typically, 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 may be caused by induction of a lasting magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often found in bigger machines compared to those used in automotive applications. A rotor magnetic field could 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 generated by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current within 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.