

Forklift Alternator

Forklift Alternators - An alternator is a machine that changes mechanical energy into electrical energy. This is done in the form of an electric current. In principal, an AC electric generator can also be referred to as an alternator. The word normally refers to a rotating, small device driven by automotive and different internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are actually called turbo-alternators. The majority of these devices utilize a rotating magnetic field but at times linear alternators are also utilized.

A current is induced within the conductor if 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 located on an iron core referred to as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced 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 can be caused 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 found in larger devices as opposed to those utilized in automotive applications. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually use a rotor winding which allows control of the voltage produced by the alternator. This is done by varying 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 due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.