

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine which transforms mechanical energy into electric energy. This is done in the form of an electric current. In principal, an AC electric generator can likewise be called an alternator. The word usually refers to a small, rotating machine driven by automotive and various internal combustion engines. Alternators that are placed in power stations and are driven by steam turbines are called turbo-alternators. The majority of these devices make use of a rotating magnetic field but every now and then linear alternators are also used.

A current is induced within 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 located on an iron core known as the stator. If the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input makes the rotor to turn. 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.

"Brushless" alternators - these make use of brushes and slip rings with a rotor winding or a permanent magnet to induce a magnetic field of current. Brushless AC generators are most often located in larger devices like for example industrial sized lifting equipment. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding which allows control of the voltage generated by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current within the rotor. These machines are limited in size due to the price of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.