

Forklift Alternators

Forklift Alternators - An alternator is a machine which converts mechanical energy into electric energy. It does this in the form of an electric current. Basically, an AC electric generator can be referred to as an alternator. The word normally refers to a small, rotating machine powered by automotive and various internal combustion engines. Alternators that are located in power stations and are powered by steam turbines are referred to as turbo-alternators. Nearly all of these devices utilize a rotating magnetic field but at times linear alternators are used.

A current is produced 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. Whenever the field cuts across the conductors, an induced electromagnetic field likewise called EMF is produced as the mechanical input causes 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 use brushes and slip rings with a rotor winding or a permanent magnet to induce a magnetic field of current. Brushless AC generators are normally found in larger machines like for example industrial sized lifting equipment. A rotor magnetic field could be produced by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize a rotor winding which allows control of the voltage generated by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current in the rotor. These machines are restricted 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.