

Alternator for Forklift

Forklift Alternators - An alternator is actually a device which changes mechanical energy into electrical energy. It does this in the form of an electric current. Basically, an AC electrical generator could also be labeled an alternator. The word typically refers to a rotating, small machine driven by automotive and other internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are called turbo-alternators. Most of these devices use a rotating magnetic field but every now and then linear alternators are also utilized.

A current is produced in the conductor if the magnetic field around 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 referred to as the stator. If the field cuts across the conductors, an induced electromagnetic field also called EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Usually, there are 3 sets of stator windings. These physically offset so that the rotating magnetic field induces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these make use of slip rings and brushes together 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 may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of 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 within the rotor. These machines are limited in size because of the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.