

Forklift Alternators

Forklift Alternator - A device used in order to change mechanical energy into electric energy is actually called an alternator. It can perform this function in the form of an electric current. An AC electrical generator could basically be called an alternator. Then again, the word is normally used to refer to a small, rotating device driven by internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are called turbo-alternators. The majority of these devices use a rotating magnetic field but every so often linear alternators are also used.

Whenever the magnetic field around a conductor changes, a current is generated within the conductor and this is the way alternators generate their electrical energy. Often the rotor, which is a rotating magnet, turns within a stationary set of conductors wound in coils located on an iron core which is referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input makes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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.

"Brushless" alternators - these make use of slip rings and brushes with a rotor winding or a permanent magnet to generate a magnetic field of current. Brushless AC generators are most often found in larger machines such as industrial sized lifting equipment. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators normally utilize a rotor winding which allows control of the voltage produced by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet machines avoid the loss because of the magnetizing current inside the rotor. These devices 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.