

Alternator for Forklift

Forklift Alternators - A machine used in order to change mechanical energy into electric energy is actually called an alternator. It could carry out this function in the form of an electrical current. An AC electrical generator can basically also be referred to as an alternator. Then again, the word is usually used to refer to a small, rotating device driven by internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are called turbo-alternators. Most of these machines use a rotating magnetic field but sometimes linear alternators are also utilized.

When the magnetic field around a conductor changes, a current is induced within the conductor and this is the way alternators generate their electrical energy. Normally the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is called 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 produces an AC voltage in the stator windings. Typically, 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 utilize brushes and slip rings together with a rotor winding or a permanent magnet to generate a magnetic field of current. Brushless AC generators are most often located in larger machines like for instance industrial sized lifting equipment. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize a rotor winding that allows control of the voltage generated by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current within the rotor. These machines are restricted in size because of the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.