

Forklift Alternators

Forklift Alternators - An alternator is actually a device that changes mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electrical generator can also be referred to as an alternator. The word usually refers to a small, rotating device driven by automotive and various internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are actually known as turbo-alternators. The majority of these machines use a rotating magnetic field but occasionally linear alternators are also used.

Whenever the magnetic field around a conductor changes, a current is induced in the conductor and this is the way alternators generate their electrical energy. Normally the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually referred to as the stator. If the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input causes the rotor to revolve. 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 induces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these utilize slip rings and brushes along with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushless AC generators are usually found in larger devices such as industrial sized lifting equipment. A rotor magnetic field can be induced by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which allows control of the voltage induced by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current in the rotor. These devices 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.