

Forklift Alternators

Forklift Alternators - An alternator is actually a device which converts mechanical energy into electric energy. This is done in the form of an electrical current. In essence, an AC electric generator can also be referred to as an alternator. The word usually refers to a small, rotating device 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. Nearly all of these machines utilize a rotating magnetic field but occasionally linear alternators are utilized.

If the magnetic field surrounding a conductor changes, a current is induced inside the conductor and this is actually the way alternators produce their electricity. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. When 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. Typically, there are 3 sets of stator windings. These are 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 with a rotor winding or a permanent magnet so as to generate a magnetic field of current. Brushless AC generators are usually found in bigger devices like for instance industrial sized lifting equipment. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding that allows control of the voltage generated by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current within the rotor. These devices are limited 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.