

Forklift Alternator

Forklift Alternators - An alternator is a machine that changes mechanical energy into electric energy. It does this in the form of an electrical current. In essence, an AC electric generator could be referred to as an alternator. The word typically refers to a small, rotating machine powered by automotive and various internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are known as turbo-alternators. Most of these devices use a rotating magnetic field but at times linear alternators are utilized.

If the magnetic field all-around a conductor changes, a current is generated inside the conductor and this is the way alternators generate their electrical energy. Usually 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 called the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes the rotor to turn. This rotating magnetic field produces 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 utilize slip rings and brushes together with a rotor winding or a permanent magnet in order to produce a magnetic field of current. Brushless AC generators are normally located 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 generated by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss because of the magnetizing current within the rotor. These devices are limited in size due to the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.