Forklift Alternators

Forklift Alternator - A device utilized to be able to transform mechanical energy into electric energy is referred to as an alternator. It can perform this function in the form of an electric current. An AC electric generator can in essence be referred to as an alternator. However, the word is normally utilized to refer to a small, rotating device powered by internal combustion engines. Alternators that are placed in power stations and are powered by steam turbines are known as turbo-alternators. Most of these devices use a rotating magnetic field but from time to time linear alternators are utilized.

When the magnetic field surrounding a conductor changes, a current is induced inside the conductor and this is how alternators generate their electrical energy. Normally the rotor, which is 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. Whenever the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input makes 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 physically offset so that the rotating magnetic field generates 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use slip rings and brushes along with a rotor winding or a permanent magnet in order to produce a magnetic field of current. Brushlees AC generators are most often located in larger devices such as industrial sized lifting equipment. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of a rotor winding that 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 due to the magnetizing current inside the rotor. These machines are restricted in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.