Forklift Alternator

Forklift Alternators - A device used to transform mechanical energy into electric energy is actually called an alternator. It could perform this function in the form of an electric current. An AC electrical generator could in essence likewise be referred to as an alternator. However, the word is normally used to refer to a rotating, small device driven by internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are actually referred to as turbo-alternators. Nearly all of these devices use a rotating magnetic field but occasionally linear alternators are utilized.

When the magnetic field 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 a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually 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 turn. This rotating magnetic field produces 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.

In a "brushless" alternator, the rotor magnetic field could be caused by induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are usually located in larger machines as opposed to those utilized in automotive applications. A rotor magnetic field could be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually use a rotor winding which allows control of the voltage produced 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 in the rotor. These machines are restricted 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.