Forklift Alternators

Forklift Alternator - An alternator is a machine which transforms mechanical energy into electrical energy. This is done in the form of an electric current. In principal, an AC electric generator could be referred to as an alternator. The word typically refers to a rotating, small device driven by automotive and different internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are referred to as turbo-alternators. Most of these machines make use of a rotating magnetic field but from time to time linear alternators are used.

Whenever the magnetic field surrounding a conductor changes, a current is generated within the conductor and this is actually 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 called the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input makes the rotor to revolve. 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 produces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field can be made by production of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally located in larger devices as opposed to those utilized in automotive applications. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators normally utilize a rotor winding that allows control of the voltage induced by the alternator. This is done 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 limited in size due to the price of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.