Forklift Alternator

Alternator for Forklift - An alternator is a machine which changes mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electrical generator can be labeled an alternator. The word normally refers to a small, rotating machine powered by automotive and other internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are actually known as turbo-alternators. Most of these machines use a rotating magnetic field but every now and then linear alternators are used.

A current is induced within the conductor if the magnetic field surrounding the conductor changes. Generally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field also 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 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 made by induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally found in bigger machines compared to those utilized in automotive applications. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding that allows control of the voltage generated 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 inside the rotor. These devices are limited in size because of the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.