Alternator for Forklift

Forklift Alternator - A device used in order to convert mechanical energy into electrical energy is actually called an alternator. It could carry out this function in the form of an electrical current. An AC electrical generator could basically also be labeled an alternator. However, the word is normally used to refer to a small, rotating device powered by internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are known as turbo-alternators. Nearly all of these devices make use of a rotating magnetic field but from time to time linear alternators are also used.

Whenever the magnetic field all-around a conductor changes, a current is induced within the conductor and this is actually the way alternators produce their electrical energy. Often the rotor, which is actually a rotating magnet, revolves 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 also called EMF is generated 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 can be caused by production of a lasting magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often found in larger machines compared to those utilized in automotive applications. A rotor magnetic field can be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of 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 due to 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.