Forklift Alternators

Forklift Alternators - An alternator is actually a device that converts mechanical energy into electric energy. It does this in the form of an electric current. Basically, an AC electric generator can also be labeled an alternator. The word usually refers to a small, rotating device powered by automotive and other internal combustion engines. Alternators which are located 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 every now and then linear alternators are also used.

A current is generated inside the conductor whenever the magnetic field around the conductor changes. Generally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core known as the stator. If the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input makes the rotor to revolve. 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 produces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field may 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 devices as opposed to those utilized in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding which 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 due to the magnetizing current within the rotor. These machines are limited in size because of the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.