Alternator for Forklift

Forklift Alternator - An alternator is a machine which converts mechanical energy into electrical energy. This is done in the form of an electric current. In essence, an AC electric generator can be referred to as an alternator. The word usually refers to a rotating, small device driven by automotive and various internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are known as turbo-alternators. Most of these machines make use of a rotating magnetic field but every so often linear alternators are also used.

A current is generated in the conductor if the magnetic field all-around the conductor changes. Normally 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. Whenever the field cuts across the conductors, an induced electromagnetic field likewise 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.

"Brushless" alternators - these make use of brushes and slip rings together with a rotor winding or a permanent magnet to generate a magnetic field of current. Brushlees AC generators are normally found in bigger devices like for example industrial sized lifting equipment. A rotor magnetic field can 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. It does this 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 due to the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.