Alternator for Forklift

Alternator for Forklift - An alternator is a machine which converts mechanical energy into electric energy. This is done in the form of an electric current. In essence, an AC electrical generator could be called an alternator. The word typically refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are known as turbo-alternators. The majority of these devices utilize a rotating magnetic field but from time to time linear alternators are also used.

When the magnetic field surrounding a conductor changes, a current is induced inside the conductor and this is actually how alternators generate their electrical energy. Often 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. If the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input causes the rotor to turn. This rotating magnetic field generates an AC voltage in the stator windings. Normally, 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 use slip rings and brushes with a rotor winding or a permanent magnet so as to generate a magnetic field of current. Brushlees AC generators are normally located in bigger machines like for instance industrial sized lifting equipment. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which allows control of the voltage produced by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These machines are restricted 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.