Alternator for Forklift

Forklift Alternators - An alternator is actually a device which transforms mechanical energy into electrical energy. This is done in the form of an electrical current. Basically, an AC electrical generator could be called an alternator. The word usually refers to a rotating, small machine driven by automotive and various internal combustion engines. Alternators that are situated in power stations and are driven by steam turbines are called turbo-alternators. The majority of these devices make use of a rotating magnetic field but every so often linear alternators are also utilized.

When the magnetic field all-around a conductor changes, a current is produced inside the conductor and this is the way alternators generate their electrical energy. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually referred to as 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 to produce a magnetic field of current. Brushlees AC generators are normally found in bigger devices such as industrial sized lifting equipment. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize a rotor winding that allows control of the voltage induced by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet machines avoid the loss because of the magnetizing current within 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.