Forklift Alternators

Forklift Alternators - A device used so as to transform mechanical energy into electrical energy is referred to as an alternator. It can carry out this function in the form of an electrical current. An AC electric generator can in principal likewise be called an alternator. However, the word is normally used to refer to a small, rotating machine driven by internal combustion engines. Alternators that are placed in power stations and are powered by steam turbines are actually referred to as turbo-alternators. Most of these machines use a rotating magnetic field but occasionally linear alternators are used.

If the magnetic field all-around a conductor changes, a current is induced in the conductor and this is actually the way alternators generate their electrical energy. Usually the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually called the stator. If the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input causes 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 induces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use brushes and slip rings with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushlees AC generators are normally found in larger devices such as industrial sized lifting equipment. A rotor magnetic field could 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 generated by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet machines 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.