Forklift Alternators

Forklift Alternators - An alternator is a machine that changes mechanical energy into electric energy. It does this in the form of an electrical current. In principal, an AC electric generator could also be called an alternator. The word typically refers to a rotating, small device powered by automotive and various internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are known as turbo-alternators. Most of these devices utilize a rotating magnetic field but sometimes linear alternators are likewise utilized.

When the magnetic field all-around a conductor changes, a current is induced within the conductor and this is the way alternators produce their electricity. Often 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 also called EMF is generated as the mechanical input causes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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 utilize slip rings and brushes along with a rotor winding or a permanent magnet to generate a magnetic field of current. Brushlees AC generators are usually located in larger devices like for example industrial sized lifting equipment. A rotor magnetic field can be induced by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which allows control of the voltage generated by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current within the rotor. These machines are restricted in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.