Forklift Alternator

Forklift Alternators - A device used to change mechanical energy into electrical energy is actually known as an alternator. It can perform this function in the form of an electric current. An AC electrical generator can basically be labeled an alternator. Then again, the word is usually used to refer to a small, rotating device powered by internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are actually called turbo-alternators. Most of these machines make use of a rotating magnetic field but every so often linear alternators are likewise used.

If the magnetic field around a conductor changes, a current is generated in the conductor and this is the way alternators produce their electrical energy. Often the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is known as the stator. If the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input causes the rotor to turn. This rotating magnetic field generates an AC voltage in the stator windings. Usually, 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.

In a "brushless" alternator, the rotor magnetic field can be made by production of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are usually located in larger devices as opposed to those utilized in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of 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 devices avoid the loss due to the magnetizing current inside 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.