Forklift Alternators

Forklift Alternator - An alternator is actually a machine which transforms mechanical energy into electrical energy. It does this in the form of an electrical current. In essence, an AC electric generator can likewise be called an alternator. The word usually refers to a small, rotating machine driven by automotive and different internal combustion engines. Alternators which are situated in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Most of these devices make use of a rotating magnetic field but every now and then linear alternators are used.

If the magnetic field around a conductor changes, a current is induced within the conductor and this is how alternators produce 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 referred to 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 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 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 caused by induction of a lasting magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally located in bigger machines than those used in automotive applications. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize 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 in 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.