

Forklift Alternators

Forklift Alternator - A machine utilized so as to convert mechanical energy into electric energy is actually known as an alternator. It can perform this function in the form of an electric current. An AC electrical generator could in principal also be labeled an alternator. Nevertheless, the word is usually 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. Nearly all of these machines utilize a rotating magnetic field but sometimes linear alternators are also used.

When the magnetic field all-around a conductor changes, a current is generated within the conductor and this is actually the way alternators produce their electrical energy. Usually the rotor, which is 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 makes 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 could be caused by induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally found in bigger machines as opposed to those used in automotive applications. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of 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 because of the magnetizing current within the rotor. These machines are limited in size because of the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.