

Forklift Alternators

Forklift Alternators - A machine used to convert mechanical energy into electrical energy is actually called an alternator. It can perform this function in the form of an electrical current. An AC electrical generator can in principal also be termed an alternator. Nonetheless, the word is normally used to refer to a rotating, small machine powered by internal combustion engines. Alternators that are placed in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Most of these machines utilize a rotating magnetic field but every so often linear alternators are utilized.

A current is generated inside the conductor if the magnetic field around the conductor changes. Usually the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core called the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input causes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Normally, there are 3 sets of stator windings. These are physically offset so that the rotating magnetic field induces 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 made by induction of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are often located in bigger machines as opposed to those utilized in automotive applications. A rotor magnetic field could be induced by a stationary field winding with moving poles in the rotor. Automotive alternators normally utilize a rotor winding which allows control of the voltage induced by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current inside the rotor. These machines are limited 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.