

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine which changes mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electrical generator can also be called an alternator. The word typically refers to a small, rotating device powered by automotive and other internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are actually known as turbo-alternators. Most of these machines use a rotating magnetic field but every so often linear alternators are likewise used.

A current is generated within the conductor when the magnetic field all-around the conductor changes. Generally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core called the stator. Whenever 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 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 usually located in larger machines compared to those utilized in automotive applications. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually use a rotor winding that allows control of the voltage produced by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These devices are limited in size because of the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.