

Alternator for Forklift

Forklift Alternators - A device used in order to transform mechanical energy into electrical energy is actually called an alternator. It could perform this function in the form of an electric current. An AC electrical generator could in principal also be called an alternator. However, the word is usually utilized to refer to a small, rotating device powered by internal combustion engines. Alternators that are placed in power stations and are powered by steam turbines are actually called turbo-alternators. Most of these machines make use of a rotating magnetic field but from time to time linear alternators are likewise utilized.

When the magnetic field around a conductor changes, a current is produced in the conductor and this is actually how alternators produce their electrical energy. Normally the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils located on an iron core which is referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field also 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. Usually, there are 3 sets of stator windings. These 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 may 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 found in larger machines than those used in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators normally use a rotor winding that allows control of the voltage induced by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet machines avoid the loss because of the magnetizing current in 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.