

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine which transforms mechanical energy into electric energy. This is done in the form of an electric current. Basically, an AC electric generator can likewise be referred to as an alternator. The word usually refers to a small, rotating device powered by automotive and various internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are known as turbo-alternators. Nearly all of these machines make use of a rotating magnetic field but every so often linear alternators are likewise used.

If the magnetic field surrounding a conductor changes, a current is generated within the conductor and this is how alternators produce their electrical energy. Usually the rotor, which is 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. Whenever the field cuts across the conductors, an induced electromagnetic field also called EMF is produced as the mechanical input makes the rotor to turn. This rotating magnetic field generates an AC voltage in the stator windings. Typically, 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 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 often located in larger 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 often utilize a rotor winding which allows control of the voltage generated 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 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.