

Alternator for Forklift

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

Whenever the magnetic field surrounding a conductor changes, a current is produced inside the conductor and this is actually how alternators produce their electrical energy. Often 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. Whenever the field cuts across the conductors, an induced electromagnetic field likewise called EMF is produced as the mechanical input makes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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 made by production 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 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 usually utilize a rotor winding that allows control of the voltage induced 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 restricted 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.