

## Forklift Alternator

Forklift Alternator - A device utilized to be able to change mechanical energy into electrical energy is called an alternator. It could carry out 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 typically used to refer to a small, rotating device powered by internal combustion engines. Alternators which are placed in power stations and are powered by steam turbines are called turbo-alternators. Most of these devices make use of a rotating magnetic field but occasionally linear alternators are used.

If the magnetic field surrounding a conductor changes, a current is produced within the conductor and this is the way alternators generate their electricity. 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 called the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input causes the rotor to revolve. This rotating magnetic field produces 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.

"Brushless" alternators - these use slip rings and brushes along with a rotor winding or a permanent magnet so as to generate a magnetic field of current. Brushless AC generators are normally located in bigger machines such as industrial sized lifting equipment. A rotor magnetic field could be produced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding which allows control of the voltage generated by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current in the rotor. These machines are restricted 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.