

## Forklift Alternators

Forklift Alternator - An alternator is a machine that transforms mechanical energy into electrical energy. This is done in the form of an electrical current. In essence, an AC electrical generator can also be called an alternator. The word normally refers to a small, rotating machine powered by automotive and other internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are actually called turbo-alternators. Most of these machines utilize a rotating magnetic field but every now and then linear alternators are also used.

Whenever the magnetic field surrounding a conductor changes, a current is induced within the conductor and this is actually the way alternators generate their electrical energy. Often the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Typically, there are 3 sets of stator windings. These are physically offset so that the rotating magnetic field produces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use brushes and slip rings with a rotor winding or a permanent magnet so as to induce a magnetic field of current. Brushless AC generators are normally located in bigger devices like industrial sized lifting equipment. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually utilize a rotor winding which allows control of the voltage produced by the alternator. It does this 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 due to the price of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.