

Alternator for Forklift

Forklift Alternators - A machine utilized to be able to transform mechanical energy into electric energy is actually called an alternator. It could perform this function in the form of an electrical current. An AC electric generator can in essence also be termed an alternator. However, the word is typically used to refer to a small, rotating machine powered by internal combustion engines. Alternators which are situated in power stations and are driven by steam turbines are actually called turbo-alternators. Most of these devices make use of a rotating magnetic field but occasionally linear alternators are utilized.

Whenever the magnetic field surrounding a conductor changes, a current is produced inside the conductor and this is how alternators generate their electricity. Normally the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually called the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input causes 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 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 slip rings and brushes along with a rotor winding or a permanent magnet to produce a magnetic field of current. Brushless AC generators are usually found in larger machines like for instance industrial sized lifting equipment. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of a rotor winding that allows control of the voltage produced 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 inside 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.