

Alternator for Forklift

Forklift Alternators - A device utilized to be able to transform mechanical energy into electric energy is called an alternator. It can carry out this function in the form of an electric current. An AC electric generator could in principal also be termed an alternator. Then again, the word is normally used to refer to a rotating, small machine powered by internal combustion engines. Alternators that are located in power stations and are powered by steam turbines are known as turbo-alternators. Most of these machines use a rotating magnetic field but every now and then linear alternators are used.

Whenever the magnetic field surrounding a conductor changes, a current is induced in the conductor and this is the way alternators generate their electrical energy. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is actually called the stator. Whenever the field cuts across the conductors, an induced electromagnetic field or 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 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 make use of brushes and slip rings along with a rotor winding or a permanent magnet to be able to generate a magnetic field of current. Brushless AC generators are most often located in bigger machines like for instance industrial sized lifting equipment. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often make use of 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 devices are restricted in size due to the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.