

Alternator for Forklift

Forklift Alternators - An alternator is a device which converts mechanical energy into electric energy. This is done in the form of an electric current. Basically, an AC electric generator can likewise be referred to as an alternator. The word usually refers to a rotating, small machine driven by automotive and various internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are actually known as turbo-alternators. Nearly all of these devices make use of a rotating magnetic field but occasionally linear alternators are also utilized.

A current is generated within the conductor whenever the magnetic field all-around the conductor changes. Normally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core known as 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 produces 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 generates 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use brushes and slip rings together with a rotor winding or a permanent magnet so as to produce a magnetic field of current. Brushless AC generators are usually found in larger 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 make use of a rotor winding which allows control of the voltage induced 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 limited 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.