

Alternator for Forklift

Forklift Alternator - An alternator is actually a device which changes mechanical energy into electrical energy. This is done in the form of an electrical current. Basically, an AC electric generator can be referred to as an alternator. The word usually refers to a rotating, small machine powered by automotive and different internal combustion engines. Alternators that are placed in power stations and are driven 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 utilized.

A current is induced within the conductor whenever the magnetic field around the conductor changes. Normally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core called the stator. Whenever the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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.

In a "brushless" alternator, the rotor magnetic field could be made by production of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are often found in larger devices than those used in automotive applications. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which allows control of the voltage generated by the alternator. It does this by varying 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 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.