

Alternator for Forklift

Forklift Alternators - An alternator is a device which transforms mechanical energy into electric energy. This is done in the form of an electrical current. In principal, an AC electric generator could be referred to as an alternator. The word usually refers to a rotating, small device powered by automotive and various internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are referred to as turbo-alternators. The majority of these devices use a rotating magnetic field but occasionally linear alternators are also utilized.

When the magnetic field around a conductor changes, a current is produced inside the conductor and this is actually how alternators generate their electrical energy. Usually 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 known as the stator. When the field cuts across the conductors, an induced electromagnetic field likewise called EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Usually, 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.

In a "brushless" alternator, the rotor magnetic field could be made by production of a lasting magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are usually found in bigger machines as opposed to those utilized in automotive applications. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually use a rotor winding which allows control of the voltage produced 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 inside the rotor. These devices are limited in size because of the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.