

Alternator for Forklift

Forklift Alternators - An alternator is a device that transforms mechanical energy into electrical energy. It does this in the form of an electrical current. In essence, an AC electric generator could also be called an alternator. The word typically refers to a rotating, small device powered by automotive and other internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are referred to as turbo-alternators. Nearly all of these devices make use of a rotating magnetic field but from time to time linear alternators are likewise used.

Whenever the magnetic field all-around a conductor changes, a current is induced inside the conductor and this is actually how alternators generate their electrical energy. Often the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. If the field cuts across the conductors, an induced electromagnetic field also called EMF is produced as the mechanical input makes the rotor to turn. 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 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 slip rings and brushes. Brushless AC generators are usually found in larger machines than 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 generated by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current within the rotor. These machines are restricted in size because of the price of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.