

Alternator for Forklift

Forklift Alternators - A device used in order to convert mechanical energy into electric energy is actually referred to as an alternator. It can perform this function in the form of an electrical current. An AC electric generator could in essence be labeled an alternator. Nevertheless, the word is normally utilized to refer to a rotating, small device powered by internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are actually called turbo-alternators. Nearly all of these devices make use of a rotating magnetic field but every now and then linear alternators are likewise utilized.

Whenever the magnetic field around a conductor changes, a current is induced within the conductor and this is the way alternators generate their electrical energy. Usually the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. When 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 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.

In a "brushless" alternator, the rotor magnetic field may be caused by induction of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally found in bigger machines compared 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 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 in the rotor. These devices are limited in size because of the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.