

Forklift Alternators

Forklift Alternator - An alternator is a machine which changes mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electric generator could likewise be referred to as an alternator. The word usually refers to a rotating, small device powered by automotive and various internal combustion engines. Alternators that 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 used.

If the magnetic field all-around a conductor changes, a current is produced in the conductor and this is actually the way alternators produce their electricity. Normally the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is referred to 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 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 caused by induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often located in larger devices compared to those used in automotive applications. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding that allows control of the voltage induced by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current within the rotor. These devices are limited in size because of the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.