

Forklift Alternator

Forklift Alternators - An alternator is a device that transforms mechanical energy into electrical energy. This is done in the form of an electric current. In essence, an AC electric generator could be labeled an alternator. The word typically refers to a rotating, small machine driven by automotive and various internal combustion engines. Alternators which are located in power stations and are powered by steam turbines are actually referred to as turbo-alternators. Nearly all of these machines make use of a rotating magnetic field but at times linear alternators are used.

When the magnetic field all-around a conductor changes, a current is generated inside the conductor and this is how alternators produce their electricity. Normally the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is called the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Usually, 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 lasting magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are usually found in bigger devices compared to 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 usually use a rotor winding which allows control of the voltage induced by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current within 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.