

Forklift Alternators

Forklift Alternators - An alternator is a device that changes mechanical energy into electrical energy. This is done in the form of an electric current. Basically, an AC electric generator can also be labeled an alternator. The word usually refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are known as turbo-alternators. Most of these machines make use of a rotating magnetic field but every now and then linear alternators are utilized.

A current is induced within the conductor when the magnetic field surrounding the conductor changes. Normally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input causes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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 caused by production of a lasting magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often found in larger machines as opposed to those utilized in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding that allows control of the voltage generated by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current inside the rotor. These devices are limited in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.