

Forklift Alternators

Forklift Alternators - An alternator is actually a device which transforms mechanical energy into electrical energy. It does this in the form of an electrical current. Basically, an AC electric generator can likewise be called an alternator. The word typically refers to a small, rotating device driven by automotive and various internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are called turbo-alternators. The majority of these devices make use of a rotating magnetic field but from time to time linear alternators are utilized.

When the magnetic field around a conductor changes, a current is produced inside the conductor and this is how alternators generate their electrical energy. Often the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is known as the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input makes 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 produces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field can 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 devices compared to those utilized in automotive applications. A rotor magnetic field can be generated 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 machines avoid the loss due to the magnetizing current in the rotor. These machines 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.