

Forklift Alternator

Forklift Alternators - An alternator is a device that converts mechanical energy into electrical energy. It does this in the form of an electrical current. In essence, an AC electric generator could be called an alternator. The word normally refers to a rotating, small device driven by automotive and different internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Most of these machines make use of a rotating magnetic field but sometimes linear alternators are utilized.

When the magnetic field all-around a conductor changes, a current is produced within the conductor and this is actually the way alternators generate their electrical energy. Usually the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is known as the stator. Whenever 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 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 produces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these utilize brushes and slip rings with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushless AC generators are normally located in larger devices like for instance industrial sized lifting equipment. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which 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 restricted 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.