

Forklift Alternators

Forklift Alternators - An alternator is actually a device that converts mechanical energy into electric energy. It does this in the form of an electric current. In essence, an AC electric generator could also be labeled an alternator. The word usually refers to a small, rotating machine powered by automotive and various internal combustion engines. Alternators that are placed in power stations and are powered by steam turbines are actually referred to as turbo-alternators. The majority of these machines use a rotating magnetic field but from time to time linear alternators are used.

A current is generated in the conductor when the magnetic field all-around the conductor changes. Usually the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core called the stator. If the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input makes 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 generates 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use slip rings and brushes with a rotor winding or a permanent magnet in order to produce a magnetic field of current. Brushless AC generators are normally found in bigger devices such as industrial sized lifting equipment. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators normally utilize 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 inside the rotor. These devices are restricted 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.