

Forklift Alternators

Forklift Alternators - An alternator is a machine which changes mechanical energy into electric energy. This is done in the form of an electrical current. In principal, an AC electric generator could also be referred to as an alternator. The word normally refers to a rotating, small machine powered by automotive and other internal combustion engines. Alternators that are located in power stations and are powered by steam turbines are actually known as turbo-alternators. Nearly all of these devices utilize a rotating magnetic field but at times linear alternators are also utilized.

A current is generated in the conductor if the magnetic field around 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 called the stator. When the field cuts across the conductors, an induced electromagnetic field or EMF is generated as the mechanical input makes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Normally, 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.

"Brushless" alternators - these utilize brushes and slip rings with a rotor winding or a permanent magnet so as to induce a magnetic field of current. Brushless AC generators are normally found in bigger machines such as industrial sized lifting equipment. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding that allows control of the voltage produced by the alternator. This is done by varying the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current in the rotor. These machines are restricted in size due to the price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.