

Alternator for Forklift

Forklift Alternators - An alternator is actually a device which changes mechanical energy into electric energy. This is done in the form of an electric current. Basically, an AC electric generator could also be called an alternator. The word usually refers to a small, rotating machine powered by automotive and different internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Most of these devices use a rotating magnetic field but every so often linear alternators are also utilized.

If the magnetic field all-around a conductor changes, a current is induced in the conductor and this is how alternators generate their electricity. Usually 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 actually referred to as the stator. When the field cuts across the conductors, an induced electromagnetic field also called EMF is generated 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 induces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these use slip rings and brushes along with a rotor winding or a permanent magnet to induce a magnetic field of current. Brushless AC generators are most often found in bigger machines like for example industrial sized lifting equipment. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding which allows control of the voltage induced by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These machines 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.