

Forklift Alternator

Forklift Alternator - An alternator is actually a machine which transforms mechanical energy into electrical energy. It does this in the form of an electrical current. Basically, an AC electric generator could also be labeled an alternator. The word normally refers to a small, rotating machine driven by automotive and other internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Nearly all of these devices make use of a rotating magnetic field but at times linear alternators are also used.

Whenever the magnetic field all-around a conductor changes, a current is generated inside the conductor and this is the way alternators generate their electricity. Normally the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field produces 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 together with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushless AC generators are most often located in bigger machines like for example industrial sized lifting equipment. A rotor magnetic field can be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding that 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 because of the magnetizing current in the rotor. These devices are limited in size because of the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.