

Alternator for Forklift

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

Whenever the magnetic field all-around a conductor changes, a current is induced within the conductor and this is actually the way alternators produce their electrical energy. Usually the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is called the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input causes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Usually, 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 utilize brushes and slip rings along with a rotor winding or a permanent magnet so as to generate a magnetic field of current. Brushless AC generators are usually found in larger devices like for instance industrial sized lifting equipment. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding that allows control of the voltage generated 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 inside the rotor. These devices are limited 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.