

Forklift Alternator

Forklift Alternator - An alternator is a machine that changes mechanical energy into electric energy. It does this in the form of an electrical current. In principal, an AC electrical generator could also be labeled an alternator. The word normally refers to a small, rotating device powered by automotive and other internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are actually known as turbo-alternators. Most of these devices make use of a rotating magnetic field but from time to time linear alternators are likewise utilized.

If the magnetic field all-around a conductor changes, a current is produced in the conductor and this is actually how alternators produce their electrical energy. Usually the rotor, which is a rotating magnet, turns within a stationary set of conductors wound in coils located on an iron core which is actually known as the stator. When the field cuts across the conductors, an induced electromagnetic field otherwise 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 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 devices such as industrial sized lifting equipment. A rotor magnetic field may be induced 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. This is done by varying the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current within the rotor. These machines are restricted in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.