

Forklift Alternators

Forklift Alternator - An alternator is a machine which changes mechanical energy into electric energy. It does this in the form of an electrical current. In principal, an AC electric generator could also be referred to as an alternator. The word usually refers to a small, rotating device driven by automotive and different internal combustion engines. Alternators which are placed in power stations and are powered by steam turbines are known as turbo-alternators. The majority of these machines make use of a rotating magnetic field but sometimes linear alternators are likewise utilized.

When the magnetic field surrounding a conductor changes, a current is generated within the conductor and this is actually how alternators generate their electricity. 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 referred to as the stator. If the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes the rotor to turn. This rotating magnetic field generates 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.

In a "brushless" alternator, the rotor magnetic field could be made by production of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are usually found in larger devices as opposed to those used in automotive applications. A rotor magnetic field can be induced by a stationary field winding with moving poles in the rotor. Automotive alternators normally utilize a rotor winding that allows control of the voltage generated by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet machines avoid the loss because of the magnetizing current in the rotor. These machines are limited in size due to the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.