

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine that changes mechanical energy into electrical energy. This is done in the form of an electrical current. Basically, an AC electrical generator can be called an alternator. The word normally refers to a rotating, small device driven by automotive and various internal combustion engines. Alternators which are situated in power stations and are driven by steam turbines are actually referred to as turbo-alternators. The majority of these machines make use of a rotating magnetic field but at times linear alternators are likewise used.

When the magnetic field surrounding a conductor changes, a current is generated within the conductor and this is actually the way alternators produce their electrical energy. Normally 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 causes 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 are physically offset so that the rotating magnetic field produces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field can be caused by production of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally located in larger devices compared to those used in automotive applications. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding which allows control of the voltage produced by the alternator. It does this by varying the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current inside the rotor. These machines are limited in size because of the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.