

Alternator for Forklift

Alternator for Forklift - An alternator is actually a device which transforms mechanical energy into electrical energy. This is done in the form of an electrical current. In essence, an AC electric generator can also be referred to as an alternator. The word typically refers to a rotating, small machine powered by automotive and different internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are referred to as turbo-alternators. The majority of these devices make use of a rotating magnetic field but from time to time linear alternators are used.

A current is induced in the conductor whenever the magnetic field all-around the conductor changes. Generally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are situated on an iron core referred to as the stator. Whenever 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 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 generates 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field may be caused by induction of a lasting magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally located in larger devices compared to those utilized in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators normally use a rotor winding that allows control of the voltage induced by the alternator. It does this by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These devices 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.