

Alternator for Forklift

Alternator for Forklift - A machine utilized so as to convert mechanical energy into electrical energy is actually referred to as an alternator. It can carry out this function in the form of an electrical current. An AC electric generator could in essence likewise be termed an alternator. Nonetheless, the word is typically used to refer to a rotating, small machine driven by internal combustion engines. Alternators which are placed in power stations and are powered by steam turbines are referred to as turbo-alternators. Most of these machines make use of a rotating magnetic field but sometimes linear alternators are likewise used.

If the magnetic field around a conductor changes, a current is produced inside the conductor and this is how alternators generate their electricity. Normally the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is actually called the stator. Whenever the field cuts across the conductors, an induced electromagnetic field also called EMF is generated 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 caused by induction of a permanent magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally found in larger machines than those used in automotive applications. A rotor magnetic field can 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 machines avoid the loss due to the magnetizing current inside 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.