

Forklift Alternators

Forklift Alternators - A device used so as to transform mechanical energy into electric energy is called an alternator. It can carry out this function in the form of an electric current. An AC electric generator can in principal likewise be termed an alternator. However, the word is usually used to refer to a small, rotating device driven by internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are called turbo-alternators. Most of these devices make use of a rotating magnetic field but every now and then linear alternators are also used.

Whenever the magnetic field all-around a conductor changes, a current is generated within the conductor and this is actually how alternators produce their electrical energy. Often the rotor, which is actually a rotating magnet, turns within a stationary set of conductors wound in coils situated on an iron core which is actually called the stator. Whenever the field cuts across the conductors, an induced electromagnetic field or 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 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 induction of a lasting magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are often found in larger machines as opposed to those utilized in automotive applications. A rotor magnetic field may be generated by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding which allows control of the voltage produced by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current in the rotor. These devices are restricted in size due to the price of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.