

Forklift Alternators

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

Whenever the magnetic field surrounding a conductor changes, a current is induced inside the conductor and this is how alternators produce their electrical energy. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is known as the stator. If the field cuts across the conductors, an induced electromagnetic field likewise called EMF is produced as the mechanical input makes the rotor to turn. This rotating magnetic field produces an AC voltage in the stator windings. Usually, 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 could be caused by production of a lasting magnet or by a rotor winding energized with direct current through brushes and slip rings. Brushless AC generators are normally found in bigger machines than those utilized in automotive applications. A rotor magnetic field can be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often use a rotor winding that allows control of the voltage produced by the alternator. This is done by varying 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 price of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.