

Forklift Alternators

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

A current is generated in the conductor whenever the magnetic field surrounding 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 called the stator. Whenever the field cuts across the conductors, an induced electromagnetic field likewise called EMF is produced as the mechanical input makes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Usually, there are 3 sets of stator windings. These are 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 may be made by induction of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally found in bigger machines as opposed to those used in automotive applications. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators usually make use of a rotor winding which 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 within 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.