

Forklift Alternator

Forklift Alternators - An alternator is a device which transforms mechanical energy into electrical energy. This is done in the form of an electrical current. In principal, an AC electrical generator could be labeled an alternator. The word typically refers to a small, rotating device powered by automotive and various internal combustion engines. Alternators which are situated 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 at times linear alternators are likewise used.

A current is produced inside the conductor when 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 located on an iron core referred to as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input causes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Normally, 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 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 usually found in bigger machines compared to those used in automotive applications. A rotor magnetic field could be induced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding that allows control of the voltage generated by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet devices avoid the loss because of the magnetizing current in the rotor. These devices are limited 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.