

Forklift Alternator

Forklift Alternators - An alternator is actually a device that converts mechanical energy into electric energy. It does this in the form of an electric current. In principal, an AC electrical generator could be labeled an alternator. The word usually refers to a rotating, small machine driven by automotive and various internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are known as turbo-alternators. The majority of these machines utilize a rotating magnetic field but from time to time linear alternators are also used.

When the magnetic field all-around a conductor changes, a current is produced inside the conductor and this is actually how alternators produce their electricity. Normally the rotor, which is a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is known as the stator. When the field cuts across the conductors, an induced electromagnetic field also called EMF is generated as the mechanical input makes the rotor to revolve. 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.

"Brushless" alternators - these utilize slip rings and brushes together with a rotor winding or a permanent magnet so as to produce a magnetic field of current. Brushless AC generators are most often found in bigger devices like industrial sized lifting equipment. A rotor magnetic field may be produced 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. This is done by changing the current in the rotor field winding. Permanent magnet devices avoid the loss due to the magnetizing current inside the rotor. These devices are limited in size because of the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.