

Forklift Alternator

Forklift Alternators - An alternator is actually a machine that changes mechanical energy into electric energy. This is done in the form of an electrical current. In principal, an AC electric generator could be referred to as an alternator. The word normally refers to a rotating, small machine powered by automotive and various internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are known as turbo-alternators. Nearly all of these machines make use of a rotating magnetic field but at times linear alternators are used.

If the magnetic field surrounding a conductor changes, a current is generated inside the conductor and this is actually the way alternators generate their electrical energy. Usually 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. If 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 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 induces 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these make use of slip rings and brushes along with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushless AC generators are most often located in bigger machines like for instance industrial sized lifting equipment. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often 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 machines avoid the loss due to the magnetizing current within the rotor. These devices are limited in size because of the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.