

Alternator for Forklift

Forklift Alternators - An alternator is actually a machine that changes mechanical energy into electrical 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 typically refers to a small, rotating device driven by automotive and other internal combustion engines. Alternators which are placed in power stations and are driven by steam turbines are actually referred to as turbo-alternators. Most of these machines use a rotating magnetic field but at times linear alternators are also used.

A current is induced within the conductor when the magnetic field around the conductor changes. Normally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is generated as the mechanical input causes the rotor to revolve. This rotating magnetic field generates an AC voltage in the stator windings. Normally, there are 3 sets of stator windings. These are physically offset so that the rotating magnetic field generates 3 phase currents, displaced by one-third of a period with respect to each other.

"Brushless" alternators - these utilize slip rings and brushes with a rotor winding or a permanent magnet in order to induce a magnetic field of current. Brushless AC generators are normally located in larger devices like industrial sized lifting equipment. A rotor magnetic field could be generated by a stationary field winding with moving poles in the rotor. Automotive alternators usually use 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 because of the magnetizing current within the rotor. These machines are restricted in size due to the cost of the magnet material. The terminal voltage varies with the speed of the generator as the permanent magnet field is constant.