Forklift Alternator

Forklift Alternators - An alternator is a machine which changes mechanical energy into electric energy. This is done in the form of an electric current. Basically, an AC electric generator could be labeled an alternator. The word normally refers to a small, rotating machine powered by automotive and other internal combustion engines. Alternators which are located in power stations and are driven by steam turbines are known as turbo-alternators. Most of these machines make use of a rotating magnetic field but every now and then linear alternators are also used.

When the magnetic field all-around a conductor changes, a current is induced inside the conductor and this is the way alternators generate their electricity. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils located on an iron core which is referred to as the stator. If the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input makes the rotor to turn. This rotating magnetic field produces 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.

In a "brushless" alternator, the rotor magnetic field can be caused by production of a permanent magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally located in bigger devices as opposed to those utilized in automotive applications. A rotor magnetic field may be induced by a stationary field winding with moving poles in the rotor. Automotive alternators normally make use of a rotor winding which 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 inside the rotor. These machines are restricted in size due to the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.