

Alternator for Forklift

Forklift Alternator - An alternator is a device that changes mechanical energy into electrical energy. It does this in the form of an electric current. In principal, an AC electric generator could also be referred to as an alternator. The word typically refers to a small, rotating device driven by automotive and other internal combustion engines. Alternators which are situated in power stations and are powered by steam turbines are known as turbo-alternators. The majority of these machines use a rotating magnetic field but every now and then linear alternators are likewise utilized.

If the magnetic field surrounding a conductor changes, a current is generated within the conductor and this is actually how alternators produce their electrical energy. Normally the rotor, which is actually a rotating magnet, revolves within a stationary set of conductors wound in coils situated on an iron core which is known as the stator. Whenever the field cuts across the conductors, an induced electromagnetic field or EMF is produced as the mechanical input makes the rotor to revolve. 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 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 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 usually use 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 because of the magnetizing current inside the rotor. These devices 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.