Forklift Starter

Forklift Starters - The starter motor of today is usually either a series-parallel wound direct current electric motor which includes a starter solenoid, which is similar to a relay mounted on it, or it can be a permanent-magnet composition. Once current from the starting battery is applied to the solenoid, mainly via a key-operated switch, the solenoid engages a lever that pushes out the drive pinion that is located on the driveshaft and meshes the pinion utilizing the starter ring gear that is found on the engine flywheel.

When the starter motor starts to turn, the solenoid closes the high-current contacts. As soon as the engine has started, the solenoid has a key operated switch that opens the spring assembly so as to pull the pinion gear away from the ring gear. This action causes the starter motor to stop. The starter's pinion is clutched to its driveshaft by an overrunning clutch. This allows the pinion to transmit drive in just one direction. Drive is transmitted in this particular method via the pinion to the flywheel ring gear. The pinion remains engaged, like for example in view of the fact that the operator did not release the key as soon as the engine starts or if the solenoid remains engaged for the reason that there is a short. This causes the pinion to spin separately of its driveshaft.

This aforesaid action prevents the engine from driving the starter. This is actually an important step since this particular type of back drive will enable the starter to spin really fast that it can fly apart. Unless modifications were made, the sprag clutch arrangement will prevent making use of the starter as a generator if it was employed in the hybrid scheme mentioned earlier. Usually an average starter motor is intended for intermittent use that would preclude it being used as a generator.

The electrical parts are made to be able to work for around thirty seconds to be able to stop overheating. Overheating is caused by a slow dissipation of heat is due to ohmic losses. The electrical components are meant to save weight and cost. This is the reason nearly all owner's handbooks used for automobiles suggest the operator to pause for at least ten seconds right after each 10 or 15 seconds of cranking the engine, if trying to start an engine that does not turn over at once.

The overrunning-clutch pinion was introduced onto the marked during the early part of the 1960's. Before the 1960's, a Bendix drive was utilized. This particular drive system works on a helically cut driveshaft which has a starter drive pinion placed on it. When the starter motor starts spinning, the inertia of the drive pinion assembly enables it to ride forward on the helix, therefore engaging with the ring gear. When the engine starts, the backdrive caused from the ring gear allows the pinion to go beyond the rotating speed of the starter. At this point, the drive pinion is forced back down the helical shaft and thus out of mesh with the ring gear.

The development of Bendix drive was developed in the 1930's with the overrunning-clutch design referred to as the Bendix Folo-Thru drive, made and launched during the 1960s. The Folo-Thru drive has a latching mechanism together with a set of flyweights within the body of the drive unit. This was an enhancement in view of the fact that the standard Bendix drive utilized in order to disengage from the ring once the engine fired, although it did not stay functioning.

Once the starter motor is engaged and begins turning, the drive unit is forced forward on the helical shaft by inertia. It then becomes latched into the engaged position. Once the drive unit is spun at a speed higher than what is attained by the starter motor itself, for instance it is backdriven by the running engine, and then the flyweights pull outward in a radial manner. This releases the latch and enables the overdriven drive unit to become spun out of engagement, therefore unwanted starter disengagement can be prevented before a successful engine start.