Forklift Starter

Starter for Forklift - A starter motors today is usually a permanent-magnet composition or a series-parallel wound direct current electrical motor with a starter solenoid installed on it. Once current from the starting battery is applied to the solenoid, basically via a key-operated switch, the solenoid engages a lever which pushes out the drive pinion that is situated on the driveshaft and meshes the pinion utilizing the starter ring gear that is found on the flywheel of the engine.

When the starter motor begins to turn, the solenoid closes the high-current contacts. When the engine has started, the solenoid consists of a key operated switch which opens the spring assembly in order 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 permits the pinion to transmit drive in just a single direction. Drive is transmitted in this manner via the pinion to the flywheel ring gear. The pinion continuous to be engaged, for example since the operator fails to release the key as soon as the engine starts or if there is a short and the solenoid remains engaged. This causes the pinion to spin separately of its driveshaft.

The actions mentioned above would stop the engine from driving the starter. This important step prevents the starter from spinning very fast that it will fly apart. Unless modifications were done, the sprag clutch arrangement will preclude making use of the starter as a generator if it was made use of in the hybrid scheme discussed prior. Normally an average starter motor is intended for intermittent use which would preclude it being utilized as a generator.

The electrical parts are made to be able to work for more or less 30 seconds to avoid overheating. Overheating is caused by a slow dissipation of heat is because of ohmic losses. The electrical parts are intended to save cost and weight. This is actually the reason nearly all owner's handbooks used for automobiles recommend the operator to pause for at least 10 seconds right after each ten or fifteen seconds of cranking the engine, when trying to start an engine which does not turn over immediately.

In the early part of the 1960s, this overrunning-clutch pinion arrangement was phased onto the market. Prior to that time, a Bendix drive was utilized. The Bendix system works by placing the starter drive pinion on a helically cut driveshaft. Once the starter motor begins spinning, the inertia of the drive pinion assembly allows it to ride forward on the helix, therefore engaging with the ring gear. Once the engine starts, the backdrive caused from the ring gear allows the pinion to go beyond the rotating speed of the starter. At this instant, the drive pinion is forced back down the helical shaft and thus out of mesh with the ring gear.

In the 1930s, an intermediate development between the Bendix drive was developed. The overrunning-clutch design that was made and introduced during the 1960s was the Bendix Folo-Thru drive. The Folo-Thru drive consists of a latching mechanism along with a set of flyweights in the body of the drive unit. This was an enhancement since the typical Bendix drive used so as to disengage from the ring when the engine fired, though it did not stay running.

The drive unit if force forward by inertia on the helical shaft as soon as the starter motor is engaged and starts turning. Then the starter motor becomes latched into the engaged position. When the drive unit is spun at a speed higher than what is attained by the starter motor itself, like for example it is backdriven by the running engine, and after that the flyweights pull outward in a radial manner. This releases the latch and enables the overdriven drive unit to become spun out of engagement, thus unwanted starter disengagement could be avoided previous to a successful engine start.