

Forklift Starters

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

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

This aforementioned action stops the engine from driving the starter. This is an important step because this particular type of back drive would enable the starter to spin very fast that it can fly apart. Unless adjustments were done, the sprag clutch arrangement would prevent using the starter as a generator if it was utilized in the hybrid scheme mentioned prior. Usually a standard starter motor is meant for intermittent use which will preclude it being utilized as a generator.

The electrical parts are made so as to work for approximately 30 seconds so as to stop overheating. Overheating is caused by a slow dissipation of heat is because of ohmic losses. The electrical parts are designed to save weight and cost. This is truly the reason most owner's instruction manuals meant for automobiles suggest the driver to stop for at least 10 seconds after each and every 10 or 15 seconds of cranking the engine, whenever trying to start an engine that does not turn over immediately.

The overrunning-clutch pinion was launched onto the market in the early part of the 1960's. Prior to the 1960's, a Bendix drive was utilized. This particular drive system operates on a helically cut driveshaft which has a starter drive pinion placed on it. When the starter motor begins turning, the inertia of the drive pinion assembly allows it to ride forward on the helix, hence 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 therefore 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 has a latching mechanism along with a set of flyweights within the body of the drive unit. This was better in view of the fact that the typical Bendix drive utilized to be able to disengage from the ring as soon as the engine fired, even if it did not stay functioning.

Once the starter motor is engaged and starts 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, like for example it is backdriven by the running engine, and next the flyweights pull outward in a radial manner. This releases the latch and enables the overdriven drive unit to become spun out of engagement, hence unwanted starter disengagement could be avoided before a successful engine start.