

Forklift Starter

Forklift Starters - The starter motor nowadays is usually either a series-parallel wound direct current electric motor which consists of a starter solenoid, which is similar to a relay mounted on it, or it can be a permanent-magnet composition. As soon as 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 engine flywheel.

Once the starter motor starts to turn, the solenoid closes the high-current contacts. When the engine has started, the solenoid has a key operated switch that opens the spring assembly 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 means of an overrunning clutch. This permits the pinion to transmit drive in only one direction. Drive is transmitted in this way via the pinion to the flywheel ring gear. The pinion remains engaged, for instance in view of the fact that the driver fails to release the key when the engine starts or if there is a short and the solenoid remains engaged. This actually causes the pinion to spin separately of its driveshaft.

The actions mentioned above would stop the engine from driving the starter. This vital step prevents the starter from spinning so fast that it can fly apart. Unless adjustments were made, the sprag clutch arrangement would preclude utilizing the starter as a generator if it was used in the hybrid scheme discussed earlier. Typically a regular starter motor is intended for intermittent use that will prevent it being utilized as a generator.

The electrical parts are made to be able to work for more or less 30 seconds to prevent overheating. Overheating is caused by a slow dissipation of heat is due to ohmic losses. The electrical parts are meant to save cost and weight. This is truly the reason most owner's manuals intended for automobiles suggest the driver to pause for at least ten seconds right after each and every 10 or 15 seconds of cranking the engine, when trying to start an engine which does not turn over instantly.

In the early part of the 1960s, this overrunning-clutch pinion arrangement was phased onto the market. Before 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 starts turning, the inertia of the drive pinion assembly allows it to ride forward on the helix, therefore engaging with the ring gear. As soon as the engine starts, the backdrive caused from the ring gear enables the pinion to surpass 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.

During the 1930s, an intermediate development between the Bendix drive was developed. The overrunning-clutch design which was made and launched during the 1960s was the Bendix Folo-Thru drive. The Folo-Thru drive consists of a latching mechanism together with a set of flyweights inside the body of the drive unit. This was better in view of the fact that the average Bendix drive utilized so as to disengage from the ring when the engine fired, though it did not stay functioning.

When 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 achieved by the starter motor itself, for example it is backdriven by the running engine, and afterward the flyweights pull outward in a radial manner. This releases the latch and allows the overdriven drive unit to become spun out of engagement, thus unwanted starter disengagement can be avoided previous to a successful engine start.