

## Forklift Starter

Forklift Starter - A starter motor today is typically a permanent-magnet composition or a series-parallel wound direct current electrical motor with a starter solenoid mounted on it. When current from the starting battery is applied to the solenoid, basically via a key-operated switch, the solenoid engages a lever that pushes out the drive pinion that is situated on the driveshaft and meshes the pinion with the starter ring gear which 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 consists of 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 an overrunning clutch. This allows the pinion to transmit drive in only one direction. Drive is transmitted in this manner through the pinion to the flywheel ring gear. The pinion continues to be engaged, for instance for the reason that 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 independently of its driveshaft.

The actions mentioned above would prevent the engine from driving the starter. This significant step stops the starter from spinning very fast that it can fly apart. Unless modifications were made, the sprag clutch arrangement will prevent the use of the starter as a generator if it was used in the hybrid scheme discussed earlier. Typically an average starter motor is designed for intermittent utilization that would prevent it being used as a generator.

The electrical parts are made so as to function for approximately 30 seconds to stop overheating. Overheating is caused by a slow dissipation of heat is because of ohmic losses. The electrical components are designed to save weight and cost. This is really the reason nearly all owner's manuals for automobiles recommend the operator to stop for at least 10 seconds after each ten or fifteen seconds of cranking the engine, if trying to start an engine which does not turn over instantly.

The overrunning-clutch pinion was introduced onto the market in the early part of the 1960's. Prior to the 1960's, a Bendix drive was used. This drive system works on a helically cut driveshaft which consists of a starter drive pinion placed on it. Once the starter motor begins turning, the inertia of the drive pinion assembly enables it to ride forward on the helix, thus engaging with the ring gear. As soon as the engine starts, the backdrive caused from the ring gear allows the pinion to surpass the rotating speed of the starter. At this instant, the drive pinion is forced back down the helical shaft and hence out of mesh with the ring gear.

The development of Bendix drive was made in the 1930's with the overrunning-clutch design called the Bendix Folo-Thru drive, developed and launched during the 1960s. The Folo-Thru drive has a latching mechanism together with a set of flyweights inside the body of the drive unit. This was better for the reason that the typical Bendix drive used to disengage from the ring when the engine fired, though it did not stay running.

The drive unit is forced forward by inertia on the helical shaft when the starter motor is engaged and begins turning. After that the starter motor becomes latched into the engaged position. As soon as 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 then the flyweights pull outward in a radial manner. This releases the latch and allows the overdriven drive unit to become spun out of engagement, therefore unwanted starter disengagement can be prevented previous to a successful engine start.