

## Forklift Starter

Forklift Starters - A starter motor today is typically a permanent-magnet composition or a series-parallel wound direct current electrical motor together with a starter solenoid mounted on it. Once current from the starting battery is applied to the solenoid, mainly 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 with the starter ring gear which is found on the engine flywheel.

The solenoid closes the high-current contacts for the starter motor, which begins to turn. After the engine starts, the key operated switch is opened and a spring in the solenoid assembly pulls 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 an overrunning clutch. This allows the pinion to transmit drive in just a single direction. Drive is transmitted in this method through the pinion to the flywheel ring gear. The pinion continues to be engaged, for instance in view of the fact that the driver did not release the key once the engine starts or if the solenoid remains engaged as there is a short. This actually causes the pinion to spin independently of its driveshaft.

The actions discussed above would prevent the engine from driving the starter. This important step stops the starter from spinning so fast that it could fly apart. Unless modifications were made, the sprag clutch arrangement will prevent utilizing the starter as a generator if it was used in the hybrid scheme mentioned prior. Usually a standard starter motor is designed for intermittent use which will stop it being utilized as a generator.

Therefore, the electrical parts are meant to be able to operate for about less than thirty seconds in order to prevent overheating. The overheating results from too slow dissipation of heat because of ohmic losses. The electrical parts are meant to save cost and weight. This is the reason nearly all owner's handbooks utilized for vehicles recommend the operator to pause for a minimum of ten seconds right after every 10 or 15 seconds of cranking the engine, if trying to start an engine that does not turn over instantly.

During the early 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. As soon as the starter motor begins spinning, the inertia of the drive pinion assembly enables it to ride forward on the helix, hence engaging with the ring gear. When the engine starts, the backdrive caused from the ring gear enables the pinion to exceed the rotating speed of the starter. At this point, the drive pinion is forced back down the helical shaft and therefore out of mesh with the ring gear.

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

As soon as 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. When the drive unit is spun at a speed higher than what is attained by the starter motor itself, 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 permits the overdriven drive unit to become spun out of engagement, thus unwanted starter disengagement could be avoided before a successful engine start.