

## Forklift Starter

Starters for Forklifts - A starter motor today is typically a permanent-magnet composition or a series-parallel wound direct current electrical motor together with a starter solenoid installed on it. When 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 located on the driveshaft and meshes the pinion utilizing the starter ring gear which is seen on the engine flywheel.

The solenoid closes the high-current contacts for the starter motor, which starts to turn. When 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 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 particular way through the pinion to the flywheel ring gear. The pinion remains engaged, like for instance since the operator did not release the key when 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 will prevent the engine from driving the starter. This significant step prevents the starter from spinning very fast that it can fly apart. Unless modifications were done, the sprag clutch arrangement would preclude utilizing the starter as a generator if it was employed in the hybrid scheme mentioned earlier. Typically an average starter motor is designed for intermittent utilization which will prevent it being used as a generator.

The electrical parts are made to function for around thirty seconds to be able to stop overheating. Overheating is caused by a slow dissipation of heat is due to ohmic losses. The electrical components are designed to save cost and weight. This is actually the reason most owner's manuals meant for vehicles suggest the operator to pause for a minimum of 10 seconds right after each and every 10 or 15 seconds of cranking the engine, if trying to start an engine which does not turn over immediately.

The overrunning-clutch pinion was launched onto the market in the early part of the 1960's. Before the 1960's, a Bendix drive was used. This particular drive system functions on a helically cut driveshaft that consists of a starter drive pinion placed on it. As soon as the starter motor starts turning, the inertia of the drive pinion assembly allows 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 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.

The development of Bendix drive was developed in the 1930's with the overrunning-clutch design known as the Bendix Folo-Thru drive, developed and introduced during the 1960s. The Folo-Thru drive consists of a latching mechanism along with a set of flyweights within the body of the drive unit. This was an improvement as the typical Bendix drive utilized in order to disengage from the ring once the engine fired, although 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. Once the drive unit is spun at a speed higher than what is achieved by the starter motor itself, like for instance 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, hence unwanted starter disengagement can be prevented prior to a successful engine start.