

Forklift Starter

Starter for Forklifts - The starter motor nowadays is typically either a series-parallel wound direct current electric motor which consists of a starter solenoid, that is similar to a relay mounted on it, or it could be a permanent-magnet composition. Once current from the starting battery is applied to the solenoid, mainly via a key-operated switch, the solenoid engages a lever that pushes out the drive pinion which is located on the driveshaft and meshes the pinion with the starter ring gear that is seen on the flywheel of the engine.

The solenoid closes the high-current contacts for the starter motor, that starts to turn. After the engine starts, the key operated switch is opened and a spring within 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 only one direction. Drive is transmitted in this manner via the pinion to the flywheel ring gear. The pinion remains engaged, like for example for the reason that the driver fails to release the key once 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 separately of its driveshaft.

The actions discussed above will prevent the engine from driving the starter. This vital step prevents the starter from spinning very fast that it would fly apart. Unless modifications were made, the sprag clutch arrangement would preclude using the starter as a generator if it was utilized in the hybrid scheme discussed earlier. Normally a regular starter motor is meant for intermittent use that would prevent it being used as a generator.

The electrical parts are made to operate for about 30 seconds in order to stop overheating. Overheating is caused by a slow dissipation of heat is due to ohmic losses. The electrical parts are designed to save cost and weight. This is truly the reason the majority of owner's handbooks for vehicles recommend the operator to pause for a minimum of 10 seconds right after every 10 or 15 seconds of cranking the engine, when trying to start an engine which does not turn over right away.

The overrunning-clutch pinion was launched onto the market during the early 1960's. Prior to the 1960's, a Bendix drive was used. This particular drive system works on a helically cut driveshaft which has a starter drive pinion placed on it. Once the starter motor starts 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 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.

During the 1930s, an intermediate development between the Bendix drive was made. The overrunning-clutch design that was developed and launched during the 1960s was the Bendix Folo-Thru drive. The Folo-Thru drive has a latching mechanism together with a set of flyweights inside the body of the drive unit. This was better as the standard Bendix drive used in order to disengage from the ring when the engine fired, even if it did not stay running.

The drive unit is forced forward by inertia on the helical shaft as soon as the starter motor is engaged and begins turning. Next 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 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, therefore unwanted starter disengagement could be prevented previous to a successful engine start.