

Starter for Forklift

Forklift Starters - Today's [Komatsu parts](#) starter motor is usually a permanent-magnet composition or a series-parallel wound direct current electrical motor together with a starter solenoid installed 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 located on the driveshaft and meshes the pinion using the starter ring gear that is found on the flywheel of the engine.

The solenoid closes the high-current contacts for the starter motor, that begins to turn. Once 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 a single direction. Drive is transmitted in this way through the pinion to the flywheel ring gear. The pinion continuous to be engaged, for instance for the reason that the driver did not release the key once the engine starts or if there is a short and the solenoid remains engaged. This causes the pinion to spin separately of its driveshaft.

This aforementioned action stops the engine from driving the starter. This is actually an essential step since this particular type of back drive would enable the starter to spin so fast that it would fly apart. Unless adjustments were made, the sprag clutch arrangement will preclude utilizing the starter as a generator if it was made use of in the hybrid scheme mentioned prior. Normally an average starter motor is designed for intermittent use that will preclude it being used as a generator.

Therefore, the electrical parts are designed to operate for about less than 30 seconds so as to avoid overheating. The overheating results from very slow dissipation of heat because of ohmic losses. The electrical components are meant to save weight and cost. This is the reason nearly all owner's guidebooks meant for automobiles suggest the operator to pause for a minimum of 10 seconds right after every 10 or 15 seconds of cranking the engine, whenever trying to start an engine which does not turn over right away.

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

The development of Bendix drive was made during the 1930's with the overrunning-clutch design known as the Bendix Folo-Thru drive, made and launched in the 1960s. The Folo-Thru drive consists of a latching mechanism together with a set of flyweights in the body of the drive unit. This was an improvement in view of the fact that the average Bendix drive used to disengage from the ring as soon as the engine fired, even though it did not stay running.

The drive unit is forced forward by inertia on the helical shaft once the starter motor is engaged and starts 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, for example it is backdriven by the running engine, and afterward the flyweights pull outward in a radial manner. This releases the latch and enables the overdriven drive unit to become spun out of engagement, hence unwanted starter disengagement can be prevented prior to a successful engine start.