Forklift Starter

Starter for Forklift - A starter motors today is usually a permanent-magnet composition or a series-parallel wound direct current electrical motor with a starter solenoid mounted on it. Once current from the starting battery is applied to the solenoid, basically through a key-operated switch, the solenoid engages a lever that pushes out the drive pinion that is located on the driveshaft and meshes the pinion using the starter ring gear that is found on the engine flywheel.

The solenoid closes the high-current contacts for the starter motor, that begins to turn. When 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 means of an overrunning clutch. This permits the pinion to transmit drive in just one direction. Drive is transmitted in this way via the pinion to the flywheel ring gear. The pinion remains engaged, for instance since the driver fails to release the key once the engine starts or if there is a short and the solenoid remains engaged. This actually causes the pinion to spin separately of its driveshaft.

The actions mentioned above will stop the engine from driving the starter. This vital step prevents the starter from spinning so fast that it will fly apart. Unless modifications were made, the sprag clutch arrangement will stop utilizing the starter as a generator if it was utilized in the hybrid scheme discussed prior. Typically a regular starter motor is meant for intermittent utilization which will stop it being utilized as a generator.

The electrical components are made to operate for approximately thirty seconds to prevent overheating. Overheating is caused by a slow dissipation of heat is because of ohmic losses. The electrical parts are intended to save weight and cost. This is really the reason most owner's instruction manuals intended for vehicles suggest the operator to stop for at least 10 seconds after each ten or fifteen seconds of cranking the engine, when trying to start an engine which does not turn over immediately.

During the early part of the 1960s, this overrunning-clutch pinion arrangement was phased onto the market. Before that time, a Bendix drive was used. The Bendix system functions 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. 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 point, the drive pinion is forced back down the helical shaft and thus out of mesh with the ring gear.

During the 1930s, an intermediate development between the Bendix drive was made. The overrunning-clutch design which was made and introduced in the 1960s was the Bendix Folo-Thru drive. The Folo-Thru drive consists of a latching mechanism together with a set of flyweights within the body of the drive unit. This was better for the reason that the standard Bendix drive used to be able to disengage from the ring as soon as the engine fired, even if it did not stay running.

The drive unit if force forward by inertia on the helical shaft once 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 achieved by the starter motor itself, for instance it is backdriven by the running engine, and afterward 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 prevented previous to a successful engine start.