Torque Converter for Forklifts

Torque Converters for Forklift - A torque converter in modern usage, is usually a fluid coupling which is utilized in order to transfer rotating power from a prime mover, for example an electric motor or an internal combustion engine, to a rotating driven load. Like a basic fluid coupling, the torque converter takes the place of a mechanized clutch. This allows the load to be separated from the main power source. A torque converter can offer the equivalent of a reduction gear by being able to multiply torque if there is a significant difference between input and output rotational speed.

The most common kind of torque converter utilized in car transmissions is the fluid coupling unit. During the 1920s there was also the Constantinesco or pendulum-based torque converter. There are various mechanical designs for constantly variable transmissions which have the ability to multiply torque. For example, the Variomatic is a version which has a belt drive and expanding pulleys.

A fluid coupling is a 2 element drive which cannot multiply torque. A torque converter has an extra part which is the stator. This alters the drive's characteristics throughout times of high slippage and produces an increase in torque output.

Inside a torque converter, there are at least of three rotating parts: the turbine, to drive the load, the impeller which is driven mechanically driven by the prime mover and the stator. The stator is between the impeller and the turbine so that it could change oil flow returning from the turbine to the impeller. Normally, the design of the torque converter dictates that the stator be stopped from rotating under whatever condition and this is where the word stator originates from. In point of fact, the stator is mounted on an overrunning clutch. This design prevents the stator from counter rotating with respect to the prime mover while still allowing forward rotation.

In the three element design there have been adjustments that have been incorporated at times. Where there is higher than normal torque manipulation is considered necessary, alterations to the modifications have proven to be worthy. More often than not, these alterations have taken the form of various turbines and stators. Each and every set has been designed to produce differing amounts of torque multiplication. Various examples include the Dynaflow which uses a five element converter in order to produce the wide range of torque multiplication required to propel a heavy vehicle.

Although it is not strictly a component of classic torque converter design, different automotive converters include a lock-up clutch to be able to reduce heat and to enhance cruising power transmission efficiency. The application of the clutch locks the turbine to the impeller. This causes all power transmission to be mechanical which eliminates losses associated with fluid drive.