Forklift Torque Converter

A torque converter in modern usage, is commonly a fluid coupling that is used to transfer rotating power from a prime mover, for instance an electric motor or an internal combustion engine, to a rotating driven load. Similar to a basic fluid coupling, the torque converter takes the place of a mechanical clutch. This enables the load to be separated from the main power source. A torque converter can provide the equivalent of a reduction gear by being able to multiply torque whenever there is a considerable difference between input and output rotational speed.

The most popular kind of torque converter used in auto transmissions is the fluid coupling kind. During the 1920s there was even the Constantinesco or otherwise known as pendulum-based torque converter. There are various mechanical designs for constantly variable transmissions which have the ability to multiply torque. Like 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 element which is the stator. This changes the drive's characteristics through occasions of high slippage and generates an increase in torque output.

In a torque converter, there are a minimum of three rotating components: the turbine, to drive the load, the impeller that is driven mechanically driven by the prime mover and the stator. The stator is between the impeller and the turbine so that it can 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 whichever condition and this is where the term stator begins from. In truth, the stator is mounted on an overrunning clutch. This design stops the stator from counter rotating with respect to the prime mover while still allowing forward rotation.

Changes to the basic three element design have been integrated periodically. These adjustments have proven worthy particularly in application where higher than normal torque multiplication is required. More often than not, these alterations have taken the form of multiple stators and turbines. Every set has been intended to generate differing amounts of torque multiplication. Several examples comprise the Dynaflow which uses a five element converter to be able to produce the wide range of torque multiplication considered necessary to propel a heavy vehicle.

Various automobile converters consist of a lock-up clutch so as to reduce heat and in order to improve the cruising power and transmission effectiveness, though it is not strictly part of the torque converter design. The application of the clutch locks the turbine to the impeller. This causes all power transmission to be mechanical that eliminates losses related with fluid drive.