Forklift Torque Converter

A torque converter in modern usage, is normally a fluid coupling which is used to be able to transfer rotating power from a prime mover, like for example an internal combustion engine or an electrical motor, to a rotating driven load. Like a basic fluid coupling, the torque converter takes the place of a mechanized 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 when there is a considerable difference between output and input rotational speed.

The most popular type of torque converter utilized in auto transmissions is the fluid coupling kind. In the 1920s there was likewise the Constantinesco or also known as pendulum-based torque converter. There are various mechanical designs utilized for constantly changeable transmissions that can multiply torque. For example, the Variomatic is a kind which has expanding pulleys and a belt drive.

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

There are a at least three rotating parts within a torque converter: the turbine, which drives the load, the impeller, which is mechanically driven by the prime mover and the stator, which is between the turbine and the impeller so that it can alter oil flow returning from the turbine to the impeller. Usually, the design of the torque converter dictates that the stator be prevented from rotating under any condition and this is where the term stator starts from. In point of fact, 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.

Modifications to the basic three element design have been incorporated periodically. These changes 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 several turbines and stators. Each and every set has been designed to generate differing amounts of torque multiplication. Various examples comprise the Dynaflow which utilizes a five element converter to be able to generate the wide range of torque multiplication required to propel a heavy vehicle.

Though it is not strictly a part of classic torque converter design, various automotive converters consist of a lock-up clutch so as to reduce heat and to improve cruising power transmission efficiency. 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.