

Forklift Torque Converter

A torque converter is actually a fluid coupling which is utilized to transfer rotating power from a prime mover, which is an internal combustion engine or as electrical motor, to a rotating driven load. The torque converter is same as a basic fluid coupling to take the place of a mechanical clutch. This allows the load to be separated from the main power source. A torque converter could provide 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 fluid coupling kind is actually the most common type of torque converter used in automobile transmissions. In the 1920's there were pendulum-based torque or also called Constantinesco converter. There are different mechanical designs utilized for continuously changeable transmissions which can multiply torque. Like for instance, the Variomatic is a kind that has expanding pulleys and a belt drive.

A fluid coupling is a 2 element drive which could not multiply torque. A torque converter has an added component that is the stator. This alters the drive's characteristics throughout times of high slippage and generates an increase in torque output.

There are at least three rotating parts in a torque converter: the turbine, which drives the load, the impeller, that is mechanically driven by the prime mover and the stator, which is between the impeller and the turbine so that it can alter oil flow returning from the turbine to the impeller. Normally, the design of the torque converter dictates that the stator be prevented from rotating under whatever situation and this is where the word stator originates from. In point of fact, the stator is mounted on an overrunning clutch. This particular 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 changes which have been integrated at times. Where there is higher than normal torque manipulation is needed, modifications to the modifications have proven to be worthy. More often than not, these alterations have taken the form of many turbines and stators. Every set has been intended to generate differing amounts of torque multiplication. Several examples comprise the Dynaflo that utilizes a five element converter to be able to generate the wide range of torque multiplication needed to propel a heavy vehicle.

Even though it is not strictly a part of classic torque converter design, various automotive converters comprise a lock-up clutch so as to reduce heat and to be able 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 which eliminates losses associated with fluid drive.