

Forklift Torque Converter

A torque converter is actually a fluid coupling which is used to be able to transfer rotating power from a prime mover, that 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 mechanized clutch. This allows the load to be separated from the main power source. A torque converter could offer the equivalent of a reduction gear by being able to multiply torque whenever there is a substantial difference between output and input rotational speed.

The fluid coupling unit is the most popular type of torque converter utilized in auto transmissions. During the 1920's there were pendulum-based torque or otherwise called Constantinesco converter. There are other mechanical designs used for constantly changeable transmissions that can multiply torque. Like for instance, the Variomatic is a type which has expanding pulleys and a belt drive.

The 2 element drive fluid coupling is incapable of multiplying torque. Torque converters have an part known as a stator. This alters the drive's characteristics during times of high slippage and produces an increase in torque output.

There are at least three rotating elements inside 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 turbine and the impeller so that it can change oil flow returning from the turbine to the impeller. Traditionally, the design of the torque converter dictates that the stator be prevented from rotating under whichever situation and this is where the term stator originates from. Actually, the stator is mounted on an overrunning clutch. This design prevents the stator from counter rotating with respect to the prime mover while still enabling forward rotation.

Alterations to the basic three element design have been incorporated periodically. These adjustments have proven worthy particularly in application where higher than normal torque multiplication is considered necessary. Usually, these alterations have taken the form of several turbines and stators. Each set has been meant to produce differing amounts of torque multiplication. Several examples comprise the Dynaflo which utilizes a five element converter so as to produce the wide range of torque multiplication required to propel a heavy vehicle.

Even though it is not strictly a component of classic torque converter design, various automotive converters comprise a lock-up clutch in order to reduce heat and so as to enhance cruising power transmission efficiency. The application of the clutch locks the impeller to the turbine. This causes all power transmission to be mechanical that eliminates losses associated with fluid drive.