

Torque Converters for Forklifts

Forklift Torque Converters - A torque converter in modern usage, is commonly a fluid coupling that is utilized 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 could offer 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 fluid coupling type is the most common type of torque converter used in auto transmissions. In the 1920's there were pendulum-based torque or also called Constantinesco converter. There are different mechanical designs used for constantly variable transmissions that have the ability to multiply torque. Like for example, the Variomatic is a type which has expanding pulleys and a belt drive.

A fluid coupling is a 2 element drive that is incapable of multiplying torque. A torque converter has an added component which is the stator. This alters the drive's characteristics during occasions of high slippage and produces an increase in torque output.

Within a torque converter, there are at least of three rotating parts: 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 turbine and the impeller so that it could alter 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 any situation and this is where the word stator begins from. In truth, 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.

In the three element design there have been changes which have been incorporated at times. Where there is higher than normal torque manipulation is needed, alterations to the modifications have proven to be worthy. Most commonly, these modifications have taken the form of many stators and turbines. Each set has been meant to produce differing amounts of torque multiplication. Several instances comprise the Dynaflo that makes use of a five element converter in order 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, different automotive converters comprise a lock-up clutch to be able to reduce heat and in order to enhance cruising power transmission effectiveness. 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.