

Torque Converters for Forklift

Forklift Torque Converter - A torque converter in modern usage, is usually a fluid coupling that is used to be able to transfer rotating power from a prime mover, like for example 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 mechanized clutch. This allows 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 fluid coupling unit is the most common kind of torque converter used in auto transmissions. In the 1920's there were pendulum-based torque or otherwise called Constantinesco converter. There are various mechanical designs used for constantly variable transmissions which could multiply torque. For instance, the Variomatic is one type which has expanding pulleys and a belt drive.

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

There are a minimum of three rotating parts 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 impeller and the turbine 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 stopped from rotating under whatever condition and this is where the word stator originates from. Actually, the stator is mounted on an overrunning clutch. This design stops the stator from counter rotating with respect to the prime mover while still permitting forward rotation.

In the three element design there have been adjustments which have been integrated periodically. Where there is higher than normal torque manipulation is required, alterations to the modifications have proven to be worthy. More often than not, these modifications have taken the form of multiple turbines and stators. Every set has been meant to generate differing amounts of torque multiplication. Several instances include the Dynaflo that makes use of a five element converter to be able to generate the wide range of torque multiplication required 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 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 connected with fluid drive.