Torque Converters for Forklift

Forklift Torque Converter - A torque converter in modern usage, is commonly a fluid coupling that is utilized 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. Same as 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 substantial difference between input and output rotational speed.

The fluid coupling unit is the most popular type of torque converter used in car transmissions. In the 1920's there were pendulum-based torque or also called Constantinesco converter. There are different mechanical designs for constantly variable transmissions that can multiply torque. For example, the Variomatic is a kind that has expanding pulleys and a belt drive.

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

Inside a torque converter, there are at least of three rotating elements: the turbine, in order to drive the load, the impeller which is driven mechanically driven by the prime mover and the stator. The stator is between the turbine and the impeller so that it can change oil flow returning from the turbine to the impeller. Usually, the design of the torque converter dictates that the stator be stopped from rotating under any condition and this is where the word stator originates 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 permitting forward rotation.

In the three element design there have been alterations that have been incorporated at times. Where there is higher than normal torque manipulation is needed, changes to the modifications have proven to be worthy. More often than not, these modifications have taken the form of various stators and turbines. Each and every set has been designed to produce differing amounts of torque multiplication. Various examples consist of the Dynaflow that makes use of a five element converter so as to produce the wide range of torque multiplication needed 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 so as to reduce heat and in order to improve cruising power transmission efficiency. The application of the clutch locks the impeller to the turbine. This causes all power transmission to be mechanical which eliminates losses related with fluid drive.