Torque Converters for Forklift

Forklift Torque Converter - A torque converter in modern usage, is normally a fluid coupling that is used to be able to transfer rotating power from a prime mover, for example an electric motor or an internal combustion engine, to a rotating driven load. Same as a basic fluid coupling, the torque converter takes 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 when there is a significant difference between input and output rotational speed.

The fluid coupling type is actually the most popular kind of torque converter used in auto transmissions. During the 1920's there were pendulum-based torque or likewise called Constantinesco converter. There are other mechanical designs for always variable transmissions which could multiply torque. For example, the Variomatic is one version which has expanding pulleys and a belt drive.

A fluid coupling is a 2 element drive which is incapable of multiplying torque. A torque converter has an extra component which is the stator. This changes the drive's characteristics during times of high slippage and generates an increase in torque output.

There are a minimum of three rotating parts inside a torque converter: the turbine, that drives the load, the impeller, which is mechanically driven by the prime mover and the stator, which is between the turbine and the impeller 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 stopped from rotating under whichever situation and this is where the term stator originates from. In reality, 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.

Changes to the basic three element design have been incorporated at times. These modifications have proven worthy particularly in application where higher than normal torque multiplication is needed. More often than not, these alterations have taken the form of various stators and turbines. Every set has been designed to generate differing amounts of torque multiplication. Some examples consist of the Dynaflow which uses a five element converter so as to generate the wide range of torque multiplication considered necessary to propel a heavy vehicle.

Even though it is not strictly a component of classic torque converter design, different automotive converters consist of a lock-up clutch so as to lessen heat and to enhance 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 related with fluid drive.