

Torque Converter for Forklifts

Forklift Torque Converter - A torque converter is a fluid coupling that is used to be able to transfer rotating power from a prime mover, which is an internal combustion engine or as electrical motor, to a rotating driven load. The torque converter is similar to a basic fluid coupling to take 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 whenever there is a significant difference between output and input rotational speed.

The most common type of torque converter used in automobile transmissions is the fluid coupling model. In the 1920s there was even the Constantinesco or also known as pendulum-based torque converter. There are different mechanical designs used for continuously variable transmissions that can multiply torque. For instance, the Variomatic is one type which has expanding pulleys and a belt drive.

The 2 element drive fluid coupling is incapable of multiplying torque. Torque converters have an component called a stator. This alters the drive's characteristics through times of high slippage and generates an increase in torque output.

There are a minimum of three rotating components inside a torque converter: the turbine, that 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 could alter 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 term stator starts from. In reality, the stator is mounted on an overrunning clutch. This particular design stops the stator from counter rotating with respect to the prime mover while still permitting forward rotation.

Alterations to the basic three element design have been incorporated sometimes. These modifications have proven worthy especially in application where higher than normal torque multiplication is considered necessary. More often than not, these adjustments have taken the form of several turbines and stators. Every set has been designed to produce differing amounts of torque multiplication. Several examples consist of the Dynaflo which makes use of a five element converter so as to generate the wide range of torque multiplication considered necessary to propel a heavy vehicle.

Various automobile converters include a lock-up clutch in order to reduce heat and so as to improve the cruising power and transmission effectiveness, even though it is not strictly part of the torque converter design. 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.