

Torque Converters for Forklift

Forklift Torque Converter - A torque converter in modern usage, is normally a fluid coupling that is used to transfer rotating power from a prime mover, for instance 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 mechanical 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 kind is the most popular type of torque converter utilized in auto transmissions. During the 1920's there were pendulum-based torque or Constantinesco converter. There are other mechanical designs used for constantly changeable transmissions which could multiply torque. Like for example, the Variomatic is one version that has expanding pulleys and a belt drive.

The 2 element drive fluid coupling cannot multiply torque. Torque converters have an element known as a stator. This changes the drive's characteristics during times of high slippage and produces an increase in torque output.

There are at least three rotating parts in 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. Normally, the design of the torque converter dictates that the stator be prevented from rotating under whichever condition and this is where the word stator begins from. Actually, 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 allowing forward rotation.

Modifications to the basic three element design have been integrated at times. These adjustments have proven worthy especially in application where higher than normal torque multiplication is required. More often than not, these alterations have taken the form of various stators and turbines. Every set has been meant to generate differing amounts of torque multiplication. Some instances consist of the Dynaflo that makes use of a five element converter to be able to generate the wide range of torque multiplication needed to propel a heavy vehicle.

Various car converters consist of a lock-up clutch in order to reduce heat and so as to improve the cruising power and transmission efficiency, although it is not strictly component of the torque converter design. The application of the clutch locks the impeller to the turbine. This causes all power transmission to be mechanical which eliminates losses associated with fluid drive.