Torque Converters for Forklifts

Torque Converters for Forklifts - A torque converter in modern usage, is normally a fluid coupling that is used in order to transfer rotating power from a prime mover, like 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 enables the load to be separated from the main power source. A torque converter could offer 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 kind is actually the most popular type of torque converter used in automobile transmissions. During the 1920's there were pendulum-based torque or Constantinesco converter. There are different mechanical designs utilized for constantly changeable transmissions which could multiply torque. For example, the Variomatic is one type 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 through times of high slippage and generates an increase in torque output.

There are a minimum of three rotating parts within a torque converter: the turbine, that drives the load, the impeller, that is mechanically driven by the prime mover and the stator, that 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 whichever condition and this is where the word stator starts from. In point of fact, the stator is mounted on an overrunning clutch. This design prevents the stator from counter rotating with respect to the prime mover while still permitting forward rotation.

Modifications to the basic three element design have been incorporated at times. These alterations 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 stators and turbines. Each and every set has been designed to produce differing amounts of torque multiplication. Various instances include the Dynaflow which makes use of a five element converter to be able to produce the wide range of torque multiplication needed to propel a heavy vehicle.

Various auto converters include a lock-up clutch to reduce heat and to enhance 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 related with fluid drive.