Torque Converter for Forklifts

Torque Converter for Forklifts - A torque converter is actually a fluid coupling that is utilized in order 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 same as 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 can provide the equivalent of a reduction gear by being able to multiply torque when there is a considerable difference between output and input rotational speed.

The fluid coupling unit is actually the most common type of torque converter utilized in automobile transmissions. In the 1920's there were pendulum-based torque or also called Constantinesco converter. There are different mechanical designs used for always variable transmissions that could multiply torque. Like for instance, the Variomatic is one type that has expanding pulleys and a belt drive.

A fluid coupling is a 2 element drive that could not multiply torque. A torque converter has an additional element which is the stator. This changes the drive's characteristics during occasions of high slippage and generates an increase in torque output.

There are a minimum of three rotating parts inside 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 term stator originates from. In 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 allowing forward rotation.

Adjustments to the basic three element design have been incorporated periodically. These changes have proven worthy particularly in application where higher than normal torque multiplication is considered necessary. Usually, these modifications have taken the form of multiple stators and turbines. Every set has been intended to generate differing amounts of torque multiplication. Various instances comprise the Dynaflow that uses a five element converter to be able to generate the wide range of torque multiplication required to propel a heavy vehicle.

Though it is not strictly a component of classic torque converter design, different automotive converters comprise a lock-up clutch to be able to lessen heat and to enhance cruising power transmission effectiveness. The application of the clutch locks the impeller to the turbine. This causes all power transmission to be mechanical that eliminates losses associated with fluid drive.