Torque Converters for Forklifts

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 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 mechanized clutch. This enables 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 if there is a significant difference between input and output rotational speed.

The fluid coupling unit is the most popular kind of torque converter utilized in automobile transmissions. During the 1920's there were pendulum-based torque or otherwise called Constantinesco converter. There are other mechanical designs for continuously changeable transmissions which could multiply torque. For example, the Variomatic is a type 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 additional component that is the stator. This changes the drive's characteristics throughout occasions of high slippage and produces an increase in torque output.

There are a minimum of three rotating components within a torque converter: the turbine, that drives the load, the impeller, which is mechanically driven by the prime mover and the stator, that is between the turbine and the impeller so that it can 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 whatever situation and this is where the term stator originates from. In 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.

Alterations to the basic three element design have been integrated at times. These changes have proven worthy specially in application where higher than normal torque multiplication is required. More often than not, these modifications have taken the form of many stators and turbines. Every set has been intended to generate differing amounts of torque multiplication. Some examples consist of the Dynaflow that makes use of a five element converter in order to generate the wide range of torque multiplication needed to propel a heavy vehicle.

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