Hyster Forklift Torque Converter

A torque converter in modern usage, is commonly a fluid coupling which is utilized so as to transfer rotating power from a prime mover, like for example an electric motor or an internal combustion engine, to a rotating driven load. Similar to 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 could offer the equivalent of a reduction gear by being able to multiply torque when there is a substantial difference between output and input rotational speed.

The most common type of torque converter used in auto transmissions is the fluid coupling model. In the 1920s there was even the Constantinesco or otherwise known as pendulum-based torque converter. There are various mechanical designs for continuously changeable transmissions that could multiply torque. Like for instance, the Variomatic is a type that has a belt drive and expanding pulleys.

The 2 element drive fluid coupling could not multiply torque. Torque converters have an element called a stator. This changes the drive's characteristics all through times of high slippage and produces an increase in torque output.

In a torque converter, there are a minimum of three rotating elements: the turbine, so as to drive the load, the impeller that is driven mechanically driven by the prime mover and the stator. The stator is between the impeller and the turbine so that it can alter oil flow returning from the turbine to the impeller. Normally, the design of the torque converter dictates that the stator be stopped from rotating under any condition and this is where the term stator originates 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.

In the three element design there have been changes which have been incorporated periodically. Where there is higher than normal torque manipulation is needed, modifications to the modifications have proven to be worthy. More often than not, these adjustments have taken the form of several stators and turbines. Each set has been designed to generate differing amounts of torque multiplication. Some examples comprise the Dynaflow that utilizes a five element converter so as to produce the wide range of torque multiplication required to propel a heavy vehicle.

Various automobile converters include a lock-up clutch in order to reduce heat and to be able to improve the cruising power and transmission efficiency, even if 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 that eliminates losses related with fluid drive.