Forklift Torque Converter

A torque converter is actually a fluid coupling which is used 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 similar to 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 whenever there is a considerable difference between output and input rotational speed.

The fluid coupling type is the most common type of torque converter utilized in automobile transmissions. During the 1920's there were pendulum-based torque or also called Constantinesco converter. There are various mechanical designs for constantly variable transmissions that could multiply torque. For instance, the Variomatic is a kind which has a belt drive and expanding pulleys.

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

There are a at least three rotating components 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. Traditionally, the design of the torque converter dictates that the stator be stopped from rotating under any situation and this is where the word 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 enabling forward rotation.

In the three element design there have been alterations which have been incorporated at times. Where there is higher than normal torque manipulation is required, adjustments to the modifications have proven to be worthy. Usually, these alterations have taken the form of several stators and turbines. Each and every set has been meant to generate differing amounts of torque multiplication. Various instances comprise the Dynaflow that makes use of a five element converter so as to generate the wide range of torque multiplication needed to propel a heavy vehicle.

Even though it is not strictly a part of classic torque converter design, various automotive converters consist of a lock-up clutch in order to lessen heat and in order to improve cruising power transmission effectiveness. The application of the clutch locks the turbine to the impeller. This causes all power transmission to be mechanical that eliminates losses associated with fluid drive.