Forklift Torque Converter

A torque converter is a fluid coupling which is used in order to transfer rotating power from a prime mover, that is an electric motor or an internal combustion engine, to a rotating driven load. The torque converter is same as a basic fluid coupling to take the place of a mechanical 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 whenever there is a significant difference between input and output rotational speed.

The most popular kind of torque converter utilized 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 used for always changeable transmissions that can multiply torque. For instance, the Variomatic is a version which has expanding pulleys and a belt drive.

A fluid coupling is a 2 element drive which cannot multiply torque. A torque converter has an additional element which is the stator. This alters the drive's characteristics during times of high slippage and produces an increase in torque output.

Inside a torque converter, there are at least of three rotating parts: 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 change oil flow returning from the turbine to the impeller. Traditionally, the design of the torque converter dictates that the stator be prevented from rotating under whichever situation and this is where the word stator starts from. In point of fact, the stator is mounted on an overrunning clutch. This particular design prevents 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 that have been incorporated sometimes. Where there is higher than normal torque manipulation is considered necessary, alterations to the modifications have proven to be worthy. More often than not, these alterations have taken the form of various turbines and stators. Each set has been designed to produce differing amounts of torque multiplication. Several examples comprise the Dynaflow that utilizes a five element converter so as to produce the wide range of torque multiplication considered necessary to propel a heavy vehicle.

Even though it is not strictly a component of classic torque converter design, various automotive converters comprise a lock-up clutch 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 related with fluid drive.