Forklift Torque Converter

A torque converter in modern usage, is normally a fluid coupling which is used so as to transfer rotating power from a prime mover, 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 provide the equivalent of a reduction gear by being able to multiply torque if there is a considerable difference between output and input rotational speed.

The most common kind of torque converter utilized in automobile transmissions is the fluid coupling type. In the 1920s there was also the Constantinesco or likewise known as pendulum-based torque converter. There are different mechanical designs utilized for constantly variable transmissions which could multiply torque. For instance, the Variomatic is one version that has a belt drive and expanding pulleys.

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

Inside a torque converter, there are a minimum of three rotating elements: the turbine, in order 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. Usually, the design of the torque converter dictates that the stator be stopped from rotating under whatever situation and this is where the word stator begins from. Actually, 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.

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

Different automobile converters comprise a lock-up clutch so as to reduce heat and to be able to enhance the cruising power and transmission effectiveness, even if it is not strictly component of the torque converter design. The application of the clutch locks the turbine to the impeller. This causes all power transmission to be mechanical which eliminates losses connected with fluid drive.