

Torque Converters for Forklifts

Forklift Torque Converters - A torque converter is actually a fluid coupling that is utilized to transfer rotating power from a prime mover, which is an electric motor or an internal combustion engine, to a rotating driven load. The torque converter is like 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 substantial difference between input and output rotational speed.

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

A fluid coupling is a 2 element drive that cannot multiply torque. A torque converter has an extra element that is the 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 components: the turbine, to drive the load, the impeller which is driven mechanically driven by the prime mover and the stator. The stator is between the impeller and the turbine so that it could 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 condition and this is where the term stator originates from. In point of 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 permitting forward rotation.

In the three element design there have been modifications which have been integrated sometimes. Where there is higher than normal torque manipulation is needed, changes to the modifications have proven to be worthy. Most commonly, these adjustments have taken the form of various stators and turbines. Every set has been meant to generate differing amounts of torque multiplication. Various instances comprise the Dynaflow which uses a five element converter to be able to produce the wide range of torque multiplication required to propel a heavy vehicle.

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