

Torque Converter for Forklifts

Torque Converter for Forklift - A torque converter in modern usage, is commonly a fluid coupling that is utilized in order to transfer rotating power from a prime mover, for example an internal combustion engine or an electrical motor, to a rotating driven load. Similar to a basic fluid coupling, the torque converter takes the place of a mechanical clutch. This allows 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 considerable difference between output and input rotational speed.

The fluid coupling type is the most common type of torque converter utilized in car transmissions. In the 1920's there were pendulum-based torque or otherwise called Constantinesco converter. There are other mechanical designs utilized for constantly variable transmissions that have the ability to 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 that cannot multiply torque. A torque converter has an additional component which is the stator. This changes the drive's characteristics all through times of high slippage and generates an increase in torque output.

There are a minimum of three rotating components in a torque converter: the turbine, which drives the load, the impeller, which is mechanically driven by the prime mover and the stator, that is between the turbine and the impeller so that it can change 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 situation and this is where the word stator starts 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 enabling forward rotation.

In the three element design there have been changes which have been integrated sometimes. Where there is higher than normal torque manipulation is required, changes 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 intended to generate differing amounts of torque multiplication. Some examples comprise the Dynaflo that makes use of a five element converter in order to produce the wide range of torque multiplication required to propel a heavy vehicle.

Though it is not strictly a part of classic torque converter design, different automotive converters comprise a lock-up clutch to reduce heat and so as 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 which eliminates losses related with fluid drive.