

Torque Converters for Forklifts

Forklift Torque Converters - A torque converter is a fluid coupling that is used so as 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 like a basic fluid coupling to take the place of a mechanized 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 when there is a considerable difference between input and output rotational speed.

The most common type of torque converter used in car transmissions is the fluid coupling kind. During the 1920s there was likewise the Constantinesco or pendulum-based torque converter. There are different mechanical designs for always variable transmissions which could multiply torque. Like for example, the Variomatic is a version which has a belt drive and expanding pulleys.

A fluid coupling is a 2 element drive that is incapable of multiplying torque. A torque converter has an additional part which is the stator. This alters the drive's characteristics through times of high slippage and produces an increase in torque output.

There are a minimum of three rotating parts inside 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 alter 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 starts from. In point of fact, the stator is mounted on an overrunning clutch. This design prevents 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 integrated at times. Where there is higher than normal torque manipulation is required, adjustments to the modifications have proven to be worthy. More often than not, these modifications have taken the form of many turbines and stators. Each and every set has been intended to produce differing amounts of torque multiplication. Several instances consist of the Dynaflo which uses a five element converter so as to produce 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, different automotive converters consist of a lock-up clutch to be able to reduce heat and to be able 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 associated with fluid drive.