

Torque Converters for Forklift

Forklift Torque Converter - A torque converter in modern usage, is usually a fluid coupling which is used to transfer rotating power from a prime mover, like for instance an internal combustion engine or an electrical motor, to a rotating driven load. Like 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 can offer the equivalent of a reduction gear by being able to multiply torque if there is a significant difference between output and input rotational speed.

The fluid coupling type is the most popular type of torque converter utilized in automobile transmissions. In the 1920's there were pendulum-based torque or likewise called Constantinesco converter. There are various mechanical designs used for always variable transmissions which can multiply torque. For example, the Variomatic is a version that has expanding pulleys and a belt drive.

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

Inside a torque converter, there are at least of three rotating elements: the turbine, to be able 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 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 condition 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 allowing forward rotation.

In the three element design there have been changes that have been integrated sometimes. Where there is higher than normal torque manipulation is considered necessary, modifications to the modifications have proven to be worthy. More often than not, these modifications have taken the form of multiple turbines and stators. Each set has been designed to generate differing amounts of torque multiplication. Some instances consist of the Dynaflo which utilizes a five element converter to be able to generate the wide range of torque multiplication needed to propel a heavy vehicle.

While it is not strictly a part of classic torque converter design, various automotive converters include a lock-up clutch to be able to reduce heat and 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 which eliminates losses related with fluid drive.