

Torque Converter for Forklift

Forklift Torque Converter - A torque converter in modern usage, is usually a fluid coupling which is used so as to transfer rotating power from a prime mover, for example an internal combustion engine or an electrical motor, to a rotating driven load. Same as a basic fluid coupling, the torque converter takes the place of a mechanized 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 if there is a considerable difference between output and input rotational speed.

The fluid coupling type is actually the most popular kind of torque converter used in automobile transmissions. During the 1920's there were pendulum-based torque or Constantinesco converter. There are other mechanical designs used for always variable transmissions that have the ability to multiply torque. For example, the Variomatic is one version which has expanding pulleys and a belt drive.

The 2 element drive fluid coupling could not multiply torque. Torque converters have an element known as a stator. This alters the drive's characteristics through times of high slippage and produces an increase in torque output.

Inside a torque converter, there are at least of three rotating parts: the turbine, so as 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 alter oil flow returning from the turbine to the impeller. Normally, the design of the torque converter dictates that the stator be prevented from rotating under any situation and this is where the word stator originates from. In reality, 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 adjustments that have been incorporated sometimes. Where there is higher than normal torque manipulation is considered necessary, changes to the modifications have proven to be worthy. More often than not, these adjustments have taken the form of multiple stators and turbines. Each set has been meant 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.

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