

Torque Converter for Forklifts

Torque Converter for Forklifts - A torque converter is actually a fluid coupling which is utilized in order 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 mechanized clutch. This enables 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 input and output rotational speed.

The fluid coupling unit is the most popular kind of torque converter used in auto transmissions. In the 1920's there were pendulum-based torque or Constantinesco converter. There are other mechanical designs utilized for constantly variable transmissions which could multiply torque. For example, the Variomatic is one kind which has a belt drive and expanding pulleys.

A fluid coupling is a 2 element drive which could not multiply torque. A torque converter has an extra element that is the stator. This alters the drive's characteristics during occasions of high slippage and produces an increase in torque output.

There are a minimum of three rotating components within a torque converter: the turbine, that drives the load, the impeller, which is mechanically driven by the prime mover and the stator, that 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 prevented from rotating under whatever condition and this is where the term stator starts from. In 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 permitting 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 required, changes to the modifications have proven to be worthy. Usually, these modifications have taken the form of several turbines and stators. Each and every set has been designed to generate differing amounts of torque multiplication. Various instances consist of the Dynaflo which makes use of a five element converter so as to generate the wide range of torque multiplication required to propel a heavy vehicle.

Various car converters consist of a lock-up clutch to reduce heat and so as to improve the cruising power and transmission effectiveness, even though it is not strictly component of the torque converter design. The application of the clutch locks the turbine to the impeller. This causes all power transmission to be mechanical that eliminates losses associated with fluid drive.