Torque Converters for Forklifts

Forklift Torque Converter - A torque converter in modern usage, is normally a fluid coupling which is used to be able to transfer rotating power from a prime mover, for example 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 mechanical clutch. This allows 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 substantial difference between output and input rotational speed.

The fluid coupling unit is actually the most common type 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 constantly variable transmissions which could multiply torque. For instance, the Variomatic is a type which has a belt drive and expanding pulleys.

A fluid coupling is a 2 element drive that cannot multiply torque. A torque converter has an added part that is the stator. This changes the drive's characteristics all through times of high slippage and produces an increase in torque output.

There are a minimum of three rotating elements in a torque converter: the turbine, which drives the load, the impeller, that 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 whichever situation and this is where the term stator starts from. In point of fact, the stator is mounted on an overrunning clutch. This particular design stops 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 which have been incorporated at times. Where there is higher than normal torque manipulation is required, adjustments to the modifications have proven to be worthy. Usually, these modifications have taken the form of various stators and turbines. Each and every set has been meant to produce differing amounts of torque multiplication. Various examples include the Dynaflow which utilizes a five element converter to be able to generate the wide range of torque multiplication required to propel a heavy vehicle.

Different auto converters comprise a lock-up clutch to be able to reduce heat and in order to improve the cruising power and transmission efficiency, although it is not strictly part of the torque converter design. 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.